NOVEMBER 11, 1939

THE LANCET

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No. XX., OF VOL. II., 1939. LONDON, SATURDAY, NOVEMBER 11, 1939. Pp. 96—Price 1s.
No. 6063. VOL. CCXXXVII. Founded 1823. PUBLISHED WEEKLY. Registered as a Newspaper. Annual Subscription: Inland £2 2s. Abroad £2 10s.

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CONTENTS

THE WHOLE OF THE LITERARY MATTER IN THE LANCET IS COPYRIGHT

ADDRESSES AND ORIGINAL ARTICLES

Tonsillectomy and Nephritis of Childhood. By R. S. ILLINGWORTH, M.R.C.P. 1013
Dissecting Aneurysm of the Aorta. By TERENCE EAST, F.R.C.P. 1017
A Huge Dissecting Aneurysm. By E. GARDNER, M.B., A. J. GALBRAITH, M.D., and S. W. HARDWICK, M.R.C.P. (*illus.*) 1019
Cod-liver-Oil Dressings: their Mode of Action. By M. LICHTENSTEIN, L.R.C.P.E. 1023
Miniature Radiography with Two Tubes, Two Cameras, and only One Generator. By B. A. DORMER, M.D., and M. GIBSON (*with diagram*). 1026

CLINICAL AND LABORATORY NOTES

Congenital Cyst of Round Ligament of Liver. By REGINALD LIGHTWOOD, F.R.C.P., and L. I. SETON CAMPBELL, M.B. (*illus.*) 1027
Gluteal and Femoral Clonus. By STEPHEN ERDESZ, M.D. (*illus.*)... 1028

REVIEWS AND NOTICES OF BOOKS

Hospital Public Relations. By Alden B. Mills..... 1029
Hospital Organization and Management. By Capt. J. E. Stone, F.S.A.A... 1030
Technique of Analytical Psychotherapy. By Wilhelm Stekel 1030
Recent Advances in Anæsthesia and Analgesia. By C. Langton Hewer, M.B. 1030
Everyman in Health and Sickness. By Dr. Harry Roberts and others.... 1030
Pleasant Food for Diabetics. By A. Sanders. 1030

LEADING ARTICLES

EMPTIED SANATORIUMS . 1031
DISSECTING ANEURYSM.. 1031
INDUSTRIAL HEALTH UNDER WAR CONDITIONS..... 1032
THE CLINICIAN AND PSYCHO-ANALYSIS 1033
TO OUR READERS..... 1033

ANNOTATIONS

The Girl's Ration..... 1034
An Unpleasant Necessity. 1034
Pyelonephritis and Hypertension 1034
Immunity to Insect Bites 1035
Twinning 1035
Swimming Ear 1035
Lung Abscess and M. & B. 693 1036
Why is the Pale Child Pale? 1036
Midwives and their Board 1036
The Gall-stone Disease .. 1037
Intestinal Obstruction in Babies 1037
Board of Control Report 1037

MEDICAL SOCIETIES

ROYAL SOCIETY OF MEDICINE: Section of Otology: Syphilis as seen by the Anral Surgeon.. 1029

THE NEW ENDOCRINOLOGY

VI—Diagnostic Value of Urinary Hormones. By Prof. E. C. DODDS, F.R.C.P. 1038

GRAINS AND SCRUPLES

II—From Rechauffeur .. 1041

THE LANCET 100 Years Ago 1033

SPECIAL ARTICLES

Medicine and the Law: Damages for Nervous Shock Refused..... 1038
Sulphonamides in Wound Infections 1039
Scotland: Treatment of Rheumatism—Death of a Showman 1039
United States of America: A Study in Twins (*with chart*)..... 1040
Bucharest: Licensing of Analytical Laboratories. Physicians in the Rumanian Chamber of Deputies 1040
The Pirquet and Mantoux Tests 1042
.... In England—Now.. 1050

LETTERS TO THE EDITOR

A Plan for British Hospitals (Mr. J. Johnston Abraham, F.R.C.S., Dr. F. M. R. Walshe, Dr. S. C. Dyke, Dr. Stanley Alcock, Dr. Duncan Leys, Dr. H. H. MacWilliam, and others) .. 1043
The Conscripted Psychopath (Prof. Millais Culpin, M.D., and another) 1047
Simultaneous Immunisation against Tetanus and Typhoid (Dr. H. H. Brown) 1047
Radon Supplies (Prof. Sidney Russ, D.Sc.).... 1048
Expectorants (Dr. Gordon Ward) 1048
Artificial Respiration in First-aid (Dr. Gilbert Burnet) 1048
Malaria and War (Sir Aldo Castellani) 1048
Treatment of Venereal Diseases in the Field (Col. E. T. Burke)..... 1049
Evacuation and Education (Dr. Octavia Lewin) 1049
Plight of the Newly Qualified (Dr. D. Macdonald and another) 1049
Constructive Birth Control (Mrs. Marie Stopes, D.Sc.) 1050
Poitrinaire's Error..... 1050

OBITUARY

Harvey Cushing 1052
Edward Palmer Poulton.. 1052

PARLIAMENTARY INTELLIGENCE

On the Floor of the House 1053
From the Press Gallery: Evacuation Problems.. 1054
Question Time: Tuberculous Persons and Evacuation—Rationing—Emergency Medical Service—Summer-time. 1055

MEDICAL NEWS

University of Oxford 1056
University of Cambridge. 1056
Roy. Coll. Phys. Lond.... 1056
Fellowship for Medical Research..... 1056
Institute for Scientific Treatment of Delinquency 1056
Scottish Conjoint Board.. 1056
Universities Parliamentary Committee 1057
Emergency Medical Service 1057
Course in Psychological Medicine 1057
British Institute of Philosophy 1057
London Clinic of Psychoanalysis..... 1057
Rations for Diabetics.... 1057
British Spas 1042

Infectious Disease in England and Wales 1057

NOTICES

The Rising Tide of Abortions in Finland 1058
Biography of Harvey Cushing 1058

Medical Diary 1057
Vacancies, Appointments, Births, Marriages and Deaths 1058

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ADDRESSES AND ORIGINAL ARTICLES

TONSILLECTOMY AND NEPHRITIS OF CHILDHOOD

BY R. S. ILLINGWORTH, M.D. Leeds, M.R.C.P., D.P.H., D.C.H.

RESIDENT MEDICAL ASSISTANT AND CLINICAL PATHOLOGIST AT THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND STREET, LONDON

TONSILLECTOMY, according to some, is almost a panacea for the diseases of childhood; according to others it is a dangerous operation, doing good to a limited few, having no effect on others, and harming many. Opinions about its value in nephritis are many and varied. The present communication is an attempt to clarify the position of tonsillectomy in nephritis: an attempt to decide whether or not tonsillectomy prevents, causes, or cures nephritis. It is a study of 365 cases of nephritis seen at the Hospital for Sick Children, Great Ormond Street, London, in the last eleven years, 301 of which were in the acute stage of the disease.

THE LITERATURE

In a hundred papers on nephritis in childhood I found no reference to the incidence and nature of nephritis arising after tonsillectomy. Only two referred to the operation as itself a cause of nephritis: Fishberg (1934) mentioned one such case and Hill (1919) two, but neither gave details. Much more has been written about tonsillectomy as a therapeutic measure.

Baehr (1926) states that removal of the source of infection often causes a temporary but pronounced increase in hæmaturia, followed by a gradual but complete disappearance of red cells from the urine. His results probably apply chiefly to adults.

Alport (1932) emphasises the importance of removal of focal sepsis, especially at an early stage of the disease, and says that "definite cure may result."

Berglund and Medes (1935) give a table which certainly suggests that persistence of infection has some effect on the ultimate outcome. They point out that hæmolytic streptococci often persist in the throats of children who have had tonsillectomy, and that such throats need careful treatment. In other words, it is not enough to remove the septic tonsils which have caused nephritis; the infection, which often persists in spite of the operation, must be eliminated.

Wyllie and Moncrieff (1926) state that it is not uncommon for blood to disappear rapidly from the urine after tonsillectomy.

Platt (1929, 1932) suggests that persistence of infection in the tonsils has an effect on the prognosis.

Others who think the removal of tonsils important as a therapeutic measure are Greenwood (1927), Kollert, Clausen (1925), Volhard and Fahr (1914), and Layman (1918). On the other hand, Addis (1931) says that removal of septic foci seems to have no permanent effect on the disease; the operation may cause a temporary exacerbation but does not lead to a lasting decrease of abnormal constituents in the urine.

Lyttle and Rosenberg (1929) said that vigorous treatment of foci of infection did not reduce acute exacerbations, but they did think that persistence of infection was a factor in causing chronicity of the nephritis. Cockburn (1935) found a slightly lower percentage of cures in patients operated on (the operation including, if necessary, antrostomy) than among those not operated on.

Ball and Evans (1932) say that it is characteristic of the disease that it pursues a course independent of the infection primarily responsible for its development. Close (1930) considers that in nephritis the value of tonsillectomy is open to doubt.

Guild (1931) found that half of those cases which were later shown to be healed, and half of those later found to have become chronic, had had their tonsils removed, and he doubts the value of the operation.

Little has been written about the time at which the operation should be performed or the relation of the incidence of exacerbations to the duration of the disease before tonsillectomy. Graubarth (1937) thinks that the tonsils may be removed during the early stage of acute nephritis. Parsons (1926) and Cautley (1923) feel that it is wiser to allow the acute stage to subside before operating.

Many of the papers are inadequate because the follow-up was too short, because criteria were not given to show what was meant by "cure," or because there were no controls to show the prognosis of cases not submitted to operation. Addis (1925, 1931), however, by the sediment count, and Berglund and Medes (1935), among others, followed many cases from the acute stage to that of chronic nephritis and compared the outcome in children with and without tonsillectomy.

PRESENT INVESTIGATION

The present communication is concerned for statistical reasons with the 301 cases seen in this hospital in the acute stage of the disease, but attention is at times drawn to a further 64 cases of nephritis which were not seen here in the acute attack. The term "acute nephritis" includes the non-œdematous forms but rigidly excludes those cases which superficially simulate acute nephritis and which are called by some "acute tubular nephritis," but which are really cases of the subacute stage of the disease. It is shown in another paper (Illingworth and Payne) that acute focal nephritis is not a clinical entity, and that no advantage is to be gained by distinguishing cases with œdema from those without. It is therefore possible to include here "acute focal nephritis" and "acute diffuse nephritis" under the one heading of "acute nephritis."

In the two groups of cases in which tonsillectomy was followed by nephritis or was performed as part of the treatment of nephritis, the operation was done at Great Ormond Street by dissection. Not all the other patients were operated on in this hospital, but no case in which septic remnants were found on admission is included in the study. Urinary examinations in the acute stage were usually made by Dr. W. W. Payne, biochemist to the hospital, and in all cases on re-examination they were made by him. Albumin was estimated quantitatively with a 3 per cent. solution of salicylsulphonic acid, and the centrifuged deposit was examined for red cells and casts. Red cells averaging more than one per $\frac{1}{4}$ in. field of the microscope in a non-catheter centrifuged specimen were considered to be of pathological significance. None of the patients had a urinary tract or vaginal infection.

All patients who had been seen in this hospital in the acute stage of the disease between 1927 and 1938 were requested to attend for re-examination, and 95 responded. The details of the re-examination are

described elsewhere (Illingworth and Payne); but it may be repeated here that every effort was made to secure an accurate reading of the blood-pressure. A blood-pressure which was twice the standard deviation from the normal, as given by Faber and James (1921), was considered to be "doubtful," and a blood-pressure which was more than three times the standard deviation was considered to be abnormal. The re-examination included a blood-urea estimation and complete analyses of the urine on two or more consecutive weeks.

The re-examinations enabled us to classify the condition of the patients as follows:—

(1) *Latent or active.*—Abnormal blood-pressure; and/or excess of red cells in the urine; and/or albumin more than 10 mg. per 100 c.cm.

(2) *Uncertain.*—Blood-pressure classed as "doubtful" with or without a trace of albumin (less than 10 mg. per 100 c.cm.).

(3) *Probably healed.*—Investigations negative or albumin less than 10 mg. per 100 c.cm. in the absence of other findings.

As points for comparison between the various groups of cases the condition of the urine on discharge, the mortality, the occurrence of exacerbations, and the condition on re-examination are presented; but it was not considered to be of value, in view of the great variations in the severity of nephritis in childhood, to present other details, such as the degree of nitrogen retention, the duration of the stay in hospital, and the presence or absence of œdema.

THE ACUTE STAGE

In 61[1] of the 301 cases seen in the acute stage tonsillectomy had been performed more than six months before the onset of nephritis. This is probably an understatement, because in some cases there was no note in the inpatient records to indicate whether the tonsils had or had not been removed. In at least 40 of these 61 cases the nephritis was attributed to an infection of the ear or throat. The following is an analysis of the cause of the nephritis in these cases:—

Pharyngitis	26
Otitis	6
Cervical adenitis	—
Coryza	2
Cause unknown, and other causes	21
Total	61

In 15 other cases nephritis followed the tonsillectomy at such a short interval that it was reasonable to suppose that the operation was the cause of the nephritis. The operation was considered to be the cause of 1 other case not seen in the acute attack but attending here in the latent stage of the disease. A total of 16 cases, therefore, in which tonsillectomy was considered to have been the probable cause of the nephritis, is described below. Table I gives the salient features of these cases. The interval between the operation and the onset of renal symptoms is not to be regarded as necessarily the same as the interval between the causal infection and the onset of nephritis; for in 4 of these cases the operation led directly to an otitis media, which in turn was followed by nephritis, and in another the operation was followed by an acute antritis, and this in turn by an acute nephritis.

The duration of the stay in hospital in these 16 cases is included to show that the condition was not very mild. In all 8 cases in which accurate records of urinary findings were kept the urine was abnormal on discharge from hospital. There was definite œdema in 4 cases, no œdema in 8, and merely puffiness of the eyes in the other 4. Nitrogen-retention is known to have occurred in 5 of the cases, but in most of the others an estimation of the blood-urea was either not performed at all or not made sufficiently early to be of value. The blood-urea falls very rapidly in acute nephritis, and therefore urea estimations to be of any value must be made early in the disease (Illingworth and Payne). The subsequent history of these patients will be discussed below.

1. This figure excludes patients who, after previous tonsillectomy, were found on admission to have tonsillar remnants.

TABLE I—CASES OF NEPHRITIS PROBABLY CAUSED BY TONSILLECTOMY

Case	Œdema	Interval between operation and onset of nephritis (days)	Postoperative otitis media	Duration of nephritis before discharge (days)	Albumin on discharge	Red cells on discharge	Blood-urea (day of disease when estimated)
1	None	21	–	9	–	N. r.	—
2	,,	13	+	36	N. r.	N. r.	—
3	,,	12	+	55	N. r.	N. r.	192 on 10th day
4	,,	3	–	194	+	+	58 on 2nd day
5	,,	5	–	37	–	N. r.	33 on 3rd day
6	,,	30	–	69	+	+	89 on 25th day
7	,,	2	–	40	–	N. r.	—
8	,,	4	–	108	–	N. r.	33 on 3rd day
9	Puffiness of eyes	1	–	56	–	N. r.	—
10	,,	28	+	61	–	+	29 on 14th day
11	,,	15	–	51	+	+	34 on 10th day
12	,,	18	+	32	–	+	—
13	General	28	–	66	+	+	21 on 24th day
14	,,	uncertain *	–	–	N. r.	N. r.	—
15	,,	28	–	41	+	+	92 on 7th day
16	,,	3	–	95	+	+	57 on 8th day

* Not seen in acute attack. N. r. = No record.

TABLE II—EXACERBATIONS AFTER TONSILLECTOMY

Duration of disease	Cases operated on	Resultant exacerbations
Less than a month	30	6
One to two months	60	16
Over two months	29	6
Total	119	28

As a therapeutic measure tonsillectomy was performed in 132 cases of nephritis, but in only 119 of these was it done in the first stage of the disease. In at least 94 of these cases there were signs of activity of the renal lesion at the time of the operation. This is almost certainly an understatement, because in most of the other cases there was no satisfactory examination of the urine—which must include microscopy of centrifuged deposit—immediately before the operation. Table II shows the incidence of postoperative exacerbations in relation to the duration of the disease before operation.

It seems surprising that exacerbations occurred in no more than 28 cases; and they did not seem to bear any relationship to the duration of the disease.

Some authorities have considered an exacerbation after tonsillectomy as characteristic of focal nephritis. Scheidemandel (1913), for instance, said that such an exacerbation was a "striking therapeutic criterion of differential diagnostic value" in focal nephritis, and that it rarely occurred in the diffuse type. The figures of this hospital, however, do not confirm that statement. The tonsils were removed in the acute stage in 61 cases without œdema and therefore presumably of focal type, with a resultant exacerbation in 11; and an exacerbation followed operation in 10 of the 28 cases (of diffuse nephritis) with general œdema. It seems, in fact, that an exacerbation is more likely in the presence of œdema than in its absence.

The exacerbations in all but 3 cases were of very brief duration—lasting not more than two or three days. In one the exacerbation appeared to last for four months, in another for three weeks; in another the exacerbation proved fatal. In this last case, one exhibiting general œdema, the operation was performed on the seventy-fifth day of the disease; a severe exacerbation occurred and the child died; no necropsy was done.

In another case also, not mentioned in the above series because it was in the subacute stage when first seen, the resultant exacerbation proved fatal. The child, aged 20 months, was admitted with a month's history of generalised œdema without other symptoms. The urine showed massive albuminuria, with no red cells in the deposit and no casts; blood-urea was normal—27 mg. per 100 c.cm. The blood-urea on the sixth day after admission was still 27, and on the thirteenth day 26 mg. per 100 c.cm. There was a reduction of plasma proteins and an inversion of the albumin-globulin ratio. Tonsillectomy was performed on the thirteenth day after admission. A serious exacerbation resulted, diarrhœa and vomiting developed, and ten days after operation the blood-urea was 258 mg. per 100 c.cm. Necropsy showed much œdema of the brain and a subacute glomerulonephritis (the "degenerative stage" of Addis).

The operation, therefore, is not entirely without danger.

Many writers say that albumin and blood rapidly disappear from the urine after tonsillectomy. This is not the experience of the hospital. Table III shows the condition of the urine on discharge in cases in which the operation was done as a therapeutic measure. In 84 per cent. of the cases in which the urine was adequately analysed it was abnormal on discharge; and the proportion showing abnormality of the urine on leaving hospital is almost the same (86 per cent.) in cases in which no tonsillectomy was performed. Those patients who had had tonsillectomy as a therapeutic measure and had abnormal urine on discharge, stayed in hospital, on an average, 36 days after the operation before being sent home; hence a reasonable time had been given for the immediate benefits of the operation to manifest themselves.

Closer examination of the analyses of urine shows that those cases which cleared up shortly after the tonsillectomy were cases in which the urine was already rapidly clearing before the operation. In not a single case of the entire series is it possible to say that the tonsillectomy had any immediate beneficial effect on the nephritis.

Table III also shows that in 8 cases in which the operation was the cause of the nephritis the urine had not cleared up before discharge.

TABLE III—IMMEDIATE AND REMOTE PROGNOSIS OF TONSILLECTOMISED CHILDREN WITH ACUTE NEPHRITIS COMPARED WITH THAT OF CONTROLS

	Cases	Condition of urine on discharge			Deaths in acute stage	Subsequent history		Condition on re-examination 1–12 years after onset. Cases = 86		
		Unknown	Abnormal	Normal		Death	Exacerbations	Latent or active	Doubtful	Apparently healed
Children in whom tonsillectomy was performed more than 6 months before onset of nephritis ..	61	28	28	5	0	2	0	15	3	3
Children in whom the operation probably caused nephritis ..	15	7	8	0	0	0	0	4	0	0
Children in whom tonsillectomy was performed as a therapeutic measure within 6 months of the onset of the disease	119	67	44	8	1	2	7	23	4	7
Control children in whom tonsillectomy was not performed	106	45	52	8	13*	0	4	20	4	3
Total	301	147	132	21	14	4	11	62	11	13

* Most of these children died in the first few days of the disease, and there is therefore no suggestion that tonsillectomy might have prevented death.

TONSILLECTOMY AND MORTALITY

None of the 14 patients who died in the acute stage had had tonsillectomy before the nephritis. Tonsillectomy was only performed during the attack in the 1 case already mentioned, and the resultant exacerbation proved fatal. Of the patients seen in the acute stage 4 are known to have died since discharge. In 2 of these the tonsils were removed before the onset of the disease; in 1 they were removed in the acute stage; and in 1 two and a half years after the onset (see table III).

TONSILLECTOMY AND SUBSEQUENT PROGRESS

Of the 301 patients 11 had exacerbations several months after the onset of the disease (table III). In 7 of these tonsillectomy had been performed during the acute stage. This figure, however, is fallacious, because on studying the relationship of tonsillectomy to subsequent exacerbations in all cases, whether seen by us in the acute stage or not, it is found that exacerbations occurred in 22 cases, and in only 9 of these had the tonsils been removed. Before presenting the result of re-examination of our own cases, it may be added that 14 patients came up to this hospital in the subacute stage of the disease having had a known previous acute attack of nephritis; 8 of them had had their tonsils removed. Tonsillectomy, therefore, had not checked the nephritis.

Finally, 95 [2] of the 301 patients with acute nephritis seen in the acute stage in the last eleven years attended for re-examination one to twelve years after the onset. Table III shows the results: signs of active nephritis were still present in 15 out of 21 who had had tonsillectomy more than six months before the nephritis, in

2. Not all of these are included in table III, owing to the fact that in 9 cases tonsillectomy was performed more than six months after the onset of the disease.

4 out of 4 in whom the operation probably caused the nephritis, in 23 out of 34 in whom the operation was done as a therapeutic measure within six months of the onset of the disease, and in 20 out of 27 with tonsils still present. These figures show that tonsillectomy as a therapeutic measure has had little effect on the eventual outcome. It is true that the percentage of patients operated on during the course of the disease who were in the latent stage when re-examined was somewhat lower than that of the patients with intact tonsils, but the difference is of no statistical importance.

Table IV shows the condition on re-examination of those patients in whom the operation may have caused the nephritis. None of the 4 cases had healed. In the fourth case in this table the blood-pressure, according to the standards we have used, was pathological.

TABLE IV—RESULTS OF RE-EXAMINATION OF CASES OF NEPHRITIS PROBABLY CAUSED BY TONSILLECTOMY

Age of onset (years)	Age when seen	Duration of nephritis before re-exam.	Blood-pressure	Blood-urea (mg. per 100 c.cm.)	Urine	
					Albumin	Red cells
4 4/12	10	5 8/12	136/82	22	+	0
11 6/12	16	4 5/12	160/100	23	+	+
6 3/12	9 6/12	3 3/12	120/75	23	+	+
5 9/12	7 5/12	1 8/12	118/85	20	0	0

DISCUSSION

Tonsillectomy does not prevent nephritis. Of 301 patients with nephritis seen in the acute stage, 61 (20·2 per cent.) had had the tonsils out some months or years before the onset of nephritis—and this almost certainly understates the facts. Glover (1938) gave statistics to show the incidence of tonsillectomy in the children of London, and from his figures it was calculated that, taking into consideration the age-incidence of nephritis in our series, approximately 9 per cent. of our patients attending for nephritis might be expected to have had a tonsillectomy before admission. We found, however, that 20·2 per cent. of the cases had had the operation, and that the proportion was in actual fact probably higher still; this figure excludes those cases of nephritis caused by the operation. It is reasonable to suggest, therefore, that tonsillectomy, so far from preventing nephritis, has more than doubled the chances of the development of the disease. It is a suggestion which requires confirmation from other sources.

The nephritis was probably caused by tonsillectomy in 15 cases (5 per cent.). It would be useful and interesting to perform daily analyses of the urine for a period of three or four weeks on a series of children submitted to tonsillectomy. It is possible that many more cases of nephritis would be found to follow the operation.

As a therapeutic measure tonsillectomy does not seem to be of value. In not a single case can it be said that the removal of the tonsils had any immediate beneficial effect on the urinary condition; neither did it appear that there was any subsequent effect: 84 per cent. of patients operated on before discharge and 86 per cent. of those in whom the tonsils were left intact had abnormal urine when they left the hospital. Exacerbations, deaths from chronic nephritis, and progress into the latent or chronic stage of the disease are not prevented by tonsillectomy. Cases in which the tonsils had been removed before the onset of nephritis had the same prognosis as those in which the tonsils were still intact on re-examination. Cases submitted to the operation fared little better.

It is possible that the experiment performed by E. C. Dickson (cited by Addis 1931) may apply to the nephritis of man. He gave rabbits and guineapigs a single dose of uranium. Many months afterwards a section of the kidney showed an active inflammatory reaction. It is possible that a single dose of streptococcal toxin can start an inflammation which may heal or may continue, despite all efforts to prevent further infections by the removal of the septic focus which caused it.

Tonsillectomy in acute nephritis has not been shown to be of any benefit to the patient. Its value, if any, should have been seen in this very large series of cases. It seems probable that an operation which may increase the risk of nephritis, may cause nephritis, may kill in nephritis, and has not been shown to help those who survive it, should not be used as a therapeutic measure in the acute nephritis of childhood.

SUMMARY

(1) Of 301 patients admitted to the Hospital for Sick Children in the last eleven years for acute nephritis 20·2 per cent. had had tonsillectomy some months or years previously. This figure does not include patients found on admission to have tonsil remnants. It is calculated from the figures showing the incidence of tonsillectomy in London children that only 9 per cent. of children admitted for the disease might be expected to have had the operation. It is suggested that the operation may, in fact, predispose to the occurrence of nephritis.

(2) In 15 (5 per cent.) of the cases admitted for acute nephritis in the last eleven years tonsillectomy is considered to have been the probable cause of the disease. The nephritis was not mild. All of the 4 cases seen later still showed evidence of active disease four to eleven years after the onset.

(3) Tonsillectomy was performed in 119 cases in the acute phase of the disease. No beneficial effect on the urinary condition was noted. Of these patients 84 per cent. were discharged with abnormal urine after an average stay in hospital of thirty-six days between the operation and discharge; and 86 per cent. of patients not operated on were discharged with abnormal urine. Tonsillectomy did not prevent exacerbations some months later or check the activity of the nephritis. Of 14 patients seen in the hospital in the subacute stage some years after the onset of nephritis 8 had had their tonsils removed during the acute stage.

Re-examination of children one to twelve years after the onset suggested that those children who had had their tonsils removed had fared no better than those whose tonsils were still intact: 23 out of 34 of those in whom the operation was performed in the acute stage, 15 out of 21 of those in whom the operation was performed before the onset of nephritis, 20 out of 27 of those with tonsils intact on re-examination, and 4 out of 4 of those cases of nephritis caused by the operation still showed evidence of activity.

(4) The final conclusion is reached that (*a*) tonsillectomy does not prevent nephritis but may predispose to it; (*b*) tonsillectomy does not cure nephritis or prevent it from progressing to the chronic stage; and (*c*) tonsillectomy may cause nephritis.

My thanks are due to the entire honorary staff of the Hospital for Sick Children, for permission to publish details of their cases and for granting facilities for this investigation.

References at foot of next page

DISSECTING ANEURYSM OF THE AORTA

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DURING recent years several articles have appeared in the United States on the clinical features and pathology of dissecting aneurysm. In this country we have the excellent monograph by Prof. T. Shennan, published by the Medical Research Council in 1934.

It seems worth while to record the following case, diagnosed during life, for most of the characteristic features were present, and survival was unusually long, and to draw attention to an important and serious condition which should be fairly easily recognised clinically if it is kept in mind. Probably it occurs more often than one might suppose.

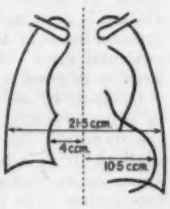
Using this case as a text, one may compare it with others in which the diagnosis has been made during life. There are 7 reported up to 1932 (Shennan 1934), and since then I have found 20, chiefly in American literature.

CASE-RECORD

The patient, a stout rather florid woman, first came under observation when she was aged 43, for high blood-pressure. This she was known to have had for two years. Her mother had died of a stroke at the age of 65, after a previous stroke at the age of 50. (An example of the prolonged course of this disease, even in its later phases, particularly in women.) Her blood-pressure was 240/140, with some arterial thickening; there was a reduplicated mitral first sound, with a slight mitral systolic murmur and some enlargement of the left ventricle; and a trace of albuminuria.

Exactly nine months later, when making a bed in the morning, she was suddenly seized with an appalling pain across the epigastrium and in the lumbar region. She managed to get downstairs and then lost the use of her legs. The pain spread all over the trunk and was intense. She vomited twice and passed water involuntarily. Later in the day the urine contained blood. The pain continued and was controlled only partially by large doses of morphia. In the evening she was still in pain, in the lumbar region chiefly. The abdominal muscles were not rigid. The blood-pressure was high. The legs were powerless and flaccid, and the deep reflexes were abolished. Sensation was dulled, the right leg and foot were colder than the left, without arterial pulse; and there was no pulsation in the right femoral artery. The pain lasted ten days. At the end of this time the blood-pressure was 284/144. The legs were weak, but the reflexes had returned. The skin was rather cool, and no pulse could be felt in either femoral artery. Leucocytes were 19,600 per c.mm., of which 79 per cent. were polymorphs. After seven weeks she was able to walk, but the pulses in the legs were still absent.

Investigations showed persistent albuminuria and a blood-urea of 60 mg. per 100 c.cm. The Wassermann reaction was negative. Radiography of the aorta showed widening and elongation throughout (see figure).



Orthodiagram.

Four months later I heard that she had had two attacks of cardiac asthma, in the height of which the systolic pressure had risen to over 300 mm. Hg. Four years later I saw her again. She said that a year previously she had walked as much as six miles and had been doing her house-work. Six months previously she had had severe pain low down in her back and had lost the use of her legs for a time. Now she was getting about well and had no breathlessness. Her feet readily became cold on walking, but she got no cramp. The left ventricle was very large, and there was a gallop rhythm. The electrocardiogram showed the usual gross left axis-deviation and negative T wave in lead 1. The brachial arteries were thick, the blood-pressure over 300/150, the same in both arms. The aortic second sound was very loud and could be clearly heard between the left scapula and the spine. The reason for this is clear from the orthodiagram, which shows the enlarged aorta (see figure). The pulsation of the aorta was extensive to the right, but very little pulsation could be seen in the posterior part of the arch and in the descending portion. There was no tracheal tug or dysphagia. Synchronous pulsation was present in the arteries of the feet, but it was weak relatively to the height of the blood-pressure. The left dorsalis pedis felt weaker than the right.

The diagnosis was obstruction of the abdominal aorta due to dissecting aneurysm in a patient with hypertension. It seems possible that she had a second minor attack, when she had pain for the second time and temporarily lost the use of her legs.

Autopsy.—Seven months later she died suddenly. I am indebted to Dr. S. McClements for the findings. A dissecting aneurysm of the aorta was present, starting at the top of the arch and extending down to the diaphragm. Layers of old hardened fibrin, "looking like boiled lentils," surrounded the vessel and left only a small central lumen. Death was due to rupture, near the top, into the left pleural sac. The heart was greatly enlarged, the cerebral arteries atheromatous, and the kidneys cystic and granular.

PATHOLOGY

The symptomatology becomes clearer when one considers the pathology (see Shennan's monograph). The underlying cause is degeneration in the middle coat. Atheroma is not a common cause; these aneurysms seldom start in the abdominal part of the aorta, where the grossest atheromatous ulcers are usually found. Syphilis plays little or no part. The dissection starts in the arch of the aorta as a rule, sometimes near the back, in the region of ductus arteriosus, but most often in the ascending part. The blood may spread downwards into the pericardial sac or any distance along the distal parts of the aorta to the iliac arteries. The result is obstruction of

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the blood-supply to various organs, and occasionally relative incompetence of the aortic valves or pressure on adjacent organs, such as the œsophagus. If the sac ruptures again into the lumen of the aorta, the blood-supply is restored and function may be resumed.

The full discussion of the pathological findings by Shennan (1934) should be consulted. McGeachy and Paullin (1937) have made a good analysis of 127 cases, and Glendy, Castleman, and White (1937) of 19.

CLINICAL FEATURES

Type of patient.—Men are affected about twice as often as women (Kellog and Heald 1933). The disease is rare under the age of 40; in later ages the sex-incidence is more equal. The large majority of patients have high blood-pressure, but they are usually in good health.

Occasion of onset.—The patient is usually engaged in some activity, as in the case described, and not uncommonly the physical exertion may be severe, such as lifting a heavy weight. Occasionally there is anger or excitement. Straining at stool and sexual intercourse have been recorded as causing the attack. The onset is essentially sudden. It is rare for any prodromal symptom to be described (Hamman and Apperly 1933).

Pain is of excruciating intensity; "rending," "tearing," "as though something had broken" is the sort of description given. One can hardly do better than quote the words of Swaine, Keyworth, and Latham (1856) in their account of the first case diagnosed during life: "There was a sudden and violent pain, as though the chest was being torn open from side to side by some outward force." The site of onset of the pain varies a good deal, depending, perhaps, on the site of the rupture. It may be in the precordium, or in the neck or the back of the chest or in the epigastrium, or in the lumbar region. It soon spreads if it has started in front, to the back, or vice versa, or from the chest to the abdomen, and down to the legs. Occasionally it radiates up to the neck, but rarely, it is important to note, into the arms. A case was diagnosed in life by Lounsbury (1935) in which the jaw and arms were much affected. Paræsthesiæ may affect the arms (Moosberger 1934). When a wide progressive spread of pain can be distinguished, the symptom is most striking (Löffler 1935). In spite of the abdominal distribution of the pain, rigidity of the abdominal muscles may be absent (Samson 1931, Barton 1930). This was so in the case described here. Another one, a woman of 56, where I made the post-mortem examination, was admitted as a surgical emergency. The pain was epigastric, with some local tenderness, but no rigidity. Death took place on the third day and was due to rupture of the aneurysm into the left pleural sac.

As is often the case in severe visceral lesions—e.g., cardiac infarction—the pain may be sometimes slight or even absent (Hamburger and Ferris 1938, Wood, Pendergrass, and Ostrum 1932).

In the absence of pain the diagnosis would be difficult and probably only confirmed by interference with circulation in peripheral vessels. The dominant symptoms would then be syncope, collapse, dizziness, and weakness of the legs. The pain may last from a few hours to a few days.

Shock and collapse are common. They are shown by the coldness, pallor, profuse sweating, and sometimes syncope. Restlessness is seen. As a result the blood-pressure may fall (Hamburger and Ferris 1938). The absence of hypertension may then be misleading in some cases.

Vomiting is common and may be a dominant symptom (Hirschbock and Boman 1922).

Interference with adjacent structures.—The great veins in the thorax may be pressed on and cause cyanosis and venous engorgement. The venous pressures may be different in the two arms, or only one external jugular vein may be distended (Clariborne and Holler 1938). The circulation to the brain may be interfered with by pressure on, or obstruction to, the carotid or innominate arteries, causing syncope or paralysis of one side of the body (Tyson 1931). Similarly there may be a great difference in the blood-pressures of the arms, or the pulse may be completely lost at one wrist (Blackford and Smith 1937). The left recurrent laryngeal nerve may become paralysed. Pressure on the œsophagus may cause dysphagia (Patrick and Taylor 1929). Pressure on the left lung may cause dyspnœa. Dullness and loss of breath sounds may be found at the left base owing to effusion in the left pleural sac or to collapse of the left lower lobe. The effusion may come earlier than the rupture of the aneurysm into the sac; this is quickly fatal. Involvement of the renal arteries may lead to anuria or to hæmaturia (Peery 1936, Glendy, Castleman, and White 1937).

If the blood spreads downwards along the first part of the aorta towards the heart, rupture may take place into the pericardial sac and cause instantaneous death. Apart from this an interesting and important clinical finding is the development of murmurs over the aortic valves. These may be systolic or diastolic or both. Many cases are quoted in which these murmurs have been found (McGeachy and Paullin 1937, Hamman and Apperly 1933). The aortic reflux appears to be relative, and due to distension of the aorta interfering with the closure of aortic valves. Left ventricular failure seems to have been caused in this way (Löffler 1935). A curious case is on record (Hamburger and Ferris 1938) in which the extravasation of blood obstructed the mouth of the right coronary artery and produced changes in the electrocardiogram resembling those caused by posterior myocardial infarction.

Peripheral circulation in the limbs.—As stated above, interference with the circulation to the limbs may cause most important and pathognomonic results. The effects on the radial pulses have been mentioned already. More significant is the loss of the pulses in the legs. This happens so often that it is one of the most characteristic results of dissecting aneurysm. Only one leg may be affected (Clariborne and Holler 1938). After a time the pulses may return, as in my case. A gross lesion of the abdominal aorta may not necessarily cause the pulses in the legs to disappear (Glendy, Castleman and White 1937). With the failure of the circulation the legs become cold and blue and the limbs flaccid. Gangrene may develop, but few patients live long enough. The power of movement is lost, and the tendon-reflexes disappear. Intense pain may radiate down the legs, or they may become numb and lose sensation.

There is usually leucocytosis, 20,000 or more; slight jaundice, from absorption of blood, has been noticed. Slight fever may develop (Osgood, Gourley, and Baker 1936).

RADIOLOGY

The aneurysm appears as a great bowed shadow in the left side of the chest. The outline may be irregular. Roesler, Gifford, and Betts (1937) have noted a shifting area of pulsation. Pleural effusion or collapse of the lung may obscure the shadow. The

article by Wood, Pendergrass, and Ostrum (1932) shows good illustrations. The degree to which the aneurysm involves the circumference of the aorta causes a good deal of variation in the appearances. Sometimes pulsation is not conspicuous, as in the case described.

COURSE AND DURATION.—TREATMENT

Probably 80 per cent. of patients die in the first day or two, but some may survive. Death is usually due to rupture of the aneurysm into the left pleural sac or into the pericardial sac. The latter seems to be the more common (McGeachy and Paullin 1937).

There is a chance of healing if the aneurysm does not rupture. Absolute rest, with very full doses of morphia, is essential. Operation has been done to save the circulation to the legs by making an incision connecting the end of the sac with the normal channel (Gurin, Bulmer, and Derby 1935). Since gangrene is uncommon, the risk of the operation seems hardly worth while, and the opportunity of doing it will be rare.

CLINICAL DIAGNOSIS

Dissecting aneurysm of the aorta causes a syndrome which should be fairly easily diagnosed. The patients are usually men, and they have high blood-pressure. The intense thoracic or epigastric pain is unique. It often comes on under stress of exertion or emotion. The spread downwards to the lower abdomen and legs is peculiar. The loss of circulation and power in the legs is characteristic. The site of the pain may resemble that of coronary thrombosis, but the usual electrocardiographic changes are unlikely to be found. The blood-pressure does not usually fall.

Difficult cases may be those with little or no pain, or when vomiting masks the symptoms. When the pain is epigastric, some surgical emergency may be suggested; but there is usually little or no abdominal rigidity. Careful examination of the peripheral circulation usually reveals pathognomonic findings. The appearance of aortic-valve murmurs is important and may be followed by rupture of the aneurysm into the pericardial sac.

SUMMARY

A case of dissecting aneurysm of the aorta in a woman with high blood-pressure, in whom the diagnosis was made during life, is described. Survival was remarkably long, five years. The clinical syndrome, as revealed by other reported cases, is reviewed.

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A HUGE DISSECTING ANEURYSM

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"A dissecting aneurysm is the lesion produced by penetration of the circulating blood into the substance of the wall of a vessel with subsequent extension of the effused blood for a varying distance between its layers. In most cases the aorta is the vessel involved, though dissecting aneurysms can form in the pulmonary artery and in all grades of arteries down to the small perforating arteries of the brain. The sac communicates with the original lumen through a rupture or ruptures of the inner layers of the wall, and though in a few cases it remains as a hæmatoma, it more usually ruptures either to the exterior or back into the lumen" (Shennan 1934).

The case to be described was encountered by one of us (E. G.) in the course of an inquest. We consider that there are many noteworthy features which justify its record. Owing to the circumstances attending the death of this boy, we have unfortunately no details of his previous health, a relatively meagre history, and no firsthand information of the physical condition during his illness.

CASE-RECORD

The patient, a boy aged 15, was evidently fairly well developed and healthy, said to be keen and proficient at games, and yet not giving the impression of being too robust. On Feb. 1, 1938, he had a cold and complained of pain in the back. He slept well that night and, although he did not attend school on the next day, he was able to return on the 3rd, on which day between 4.30 and 5 P.M. he committed some misdemeanour and was punished by being made to "squat" in front of his class for about three minutes. At about 6.30 P.M. he went to the lavatory, where he was seized with such violent pain that he was only able to crawl for assistance. He was taken home and seen by his doctor about 7.30 P.M., when he had agonising pain and cramp in both legs from the toes upwards. He was given a hot bath and some aspirin and then seemed better. Later he was seen by the doctor again, when abdominal rigidity was present and some increase in the respiration-rate was noted. He had a second bath and again appeared considerably relieved. Just before 2 A.M. on the 4th he called out from his bed, complaining of severe pain rising up from the abdomen into the chest, and then died almost immediately.

Post-mortem findings.—A post-mortem examination was made fifty-seven hours after death. Rigor mortis was present but beginning to pass off in all regions. The ears and nails were blue, the facies was pale, and the pupils were widely dilated.

About 1 oz. of blood was found in the pericardial cavity. The right pleural cavity contained about 1½ pints of bloodstained serum and about 12 oz. of blood-clot. The left pleural cavity was free from adhesions and contained no fluid. The lungs showed some œdema, and partial collapse was present on the right side.

The heart (not weighed) was of average size. The epicardial fat was increased. The right side contained a little pale clot, and the left side was empty. The valves were normal and competent, showing no signs of organic disease. The myocardium appeared healthy.

Aorta and main vessels: the appearance of the thoracic aorta was such that a dissecting aneurysm

was at once suspected, and therefore the procedure recommended by Shennan (1934) of removing as much of the cardio-arterial system as possible *en bloc* was adopted.

The thoracic aorta appeared to be completely encased in a huge blood-clot, which was continuous with the intrapleural hæmorrhage. The structure of the vessel was completely disorganised, the outer layers appearing to be entirely disintegrated and merged with the huge para-arterial clot, in the centre of which was a thin tube-like structure resembling the finger of a rubber glove. This "tube" was broken up into large segments, which could easily be detached from the surrounding clot. The fragmentation of the "inner tube" may have been due to trauma in removing the parts, although as much care was taken as possible.

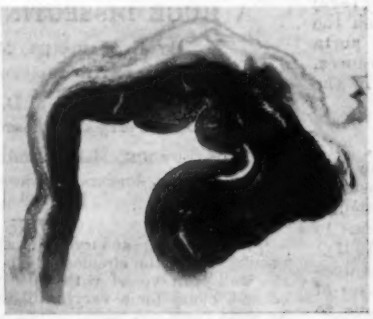

FIG. 1—Pulmonary artery, showing dissection of the vessel wall, with blood-clot lying between the media and adventitia in approximately the right half of the section. The left half shows absence of dissection of vessel wall. Hæmatoxylin and eosin. (× 7.)

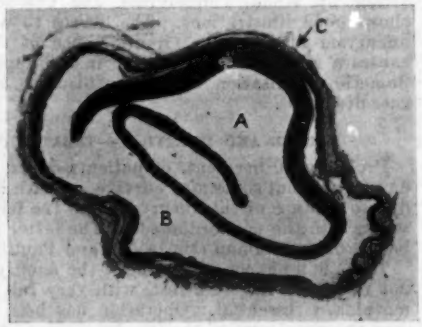

FIG. 2—Abdominal aorta, showing almost complete dissection of vessel wall, the line of cleavage being in the media: A, original lumen; B, cavity of the aneurysm; C, undissected vessel wall. Weigert's elastin stain. (× 6.)

The abdominal aorta was not entirely obscured by clot, but its wall was very dark. A large retroperitoneal hæmorrhage was found just above the level of the bifurcation. In the lower limbs a large longitudinal blood-clot was found in the line of the femoral vessels, extending as far down as the anterior and posterior tibial arteries on both sides. Similar clot, continuous below with the para-aortic, was found surrounding the subclavian arteries and the beginning of both common carotid arteries.

The heart and vessels were placed in fixing fluid and subsequently examined by making a series of horizontal sections. In this way the approximate extent of the dissecting aneurysm and its relationship to para-arterial clot were determined. A section just above the aortic valves showed that the outer layers of the aortic wall could still be distinguished but were widely separated from the inner layers by blood. Clot surrounded the pulmonary vessels, and the wall of the pulmonary artery was dissected as far as its right main branch. The right coronary and its descending branch (for about 1 in.) were clearly dissected; the circumflex branch was thin but not dissected. Sections through the arch and through the descending portion of the thoracic aorta showed the "inner tube" and surrounding clot, but no outer layers were discerned. A dissecting layer of blood was found in both subclavian arteries, at the beginning of each axillary artery, and involving the whole length of both common carotids and about 1 in. of the beginning of both the internal and external carotids.

The abdominal aorta showed complete dissection. The process extended into the superior and interior mesenteric arteries, the renal arteries, and the common iliacs and their main branches. In the lower limbs an intramural layer of blood could be traced with certainty down to the level of the popliteal arteries. As previously mentioned, blood-clot extended beyond this point on both sides, but on macroscopic examination alone it was impossible to determine the precise lower limits of the dissecting blood.

Microscopic findings.—In the search for more detailed information, a series of stained sections was prepared from the various regions of the arterial system, particular regard being paid to the precise limits of the dissecting process.

Ascending aorta: a section of part of the anterior wall showed that the dissecting blood was situated in the media at about the junction of its outer and middle thirds. There were many blood-cells in the substance of the outer layers of the adventitia, and here and there were accumulations of white cells, mainly polymorphs.

Upper part of the descending thoracic aorta: in the midst of the blood-clot the "tube" consisted of intima and about the inner two-thirds of media. Here and there small tags of blood-clot adhered to the outer aspect.

Pulmonary artery: the dissecting blood lay between the medial and adventitial coats. The maximal width in the section was about twice that of the vessel wall (fig. 1).

FIG. 3—Right common iliac artery, showing dissection of about two-thirds of the vessel wall, compressed and empty lumen, and blood-clot surrounding the vessel and in the cavity of the aneurysm: A, original lumen; B, cavity of the aneurysm; C, para-arterial blood-clot. Weigert's elastin stain. (× 7.)

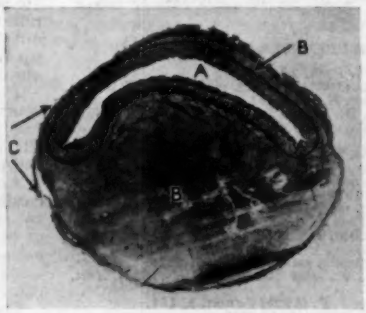

FIG. 4—Right femoral artery, showing dissection of the vessel wall between adventitia and media, and compressed and empty lumen: A, original lumen; B, blood-filled cavity of the aneurysm; C, adventitial layers. Weigert's elastin stain. (× 7.)

Abdominal aorta: the whole circumference of the vessel was dissected except in a small area; the line of cleavage lay between the outer and middle thirds of the media. The appearances of the adventitia were similar to those found in the ascending aorta. The lumen of the vessel was irregular, flattened, and empty (fig. 2).

Superior mesenteric artery: blood-cells infiltrated the adventitial layers in its entire circumference, and the clot was in direct contact with the media.

Right common iliac artery: about two-thirds of the circumference was dissected, the line of dissection being situated about the middle of the media. The lumen of the vessel was compressed but contained a few blood-cells. The whole vessel was surrounded by a large mass of clot (para-arterial), but there was no apparent communication between this and the aneurysm (fig. 3).

Right femoral artery: there was a dissecting layer of blood throughout the whole circumference, varying in thickness from a mere streak, a few blood-cells thick in one part, to a large clot, the maximal width of which was at least equal to the diameter of the arterial walls. It was situated immediately external to the external elastic membrane, and the outer wall of the aneurysm was formed by a well-preserved band of adventitia (fig. 4).

Left femoral artery: the general appearance was very similar to that of the right femoral artery, except that in one small sector of the vessel no definite dissection had taken place. The lumen was almost completely obliterated.

Right popliteal artery: dissection involved the whole circumference but was limited to the adventitial layers. With the elastic-tissue stain fragments of adventitial tissue could be seen embedded in clot. In certain areas the dissecting blood was bounded by a distinct band of adventitia, but elsewhere it appeared to merge with the large para-arterial clot.

FIG. 5—Right popliteal artery, showing dissection of the adventitial layers. The elastic-tissue fibres of the adventitia are still visible in the blood-clot. A, original lumen; B, blood-clot; C, elastic-tissue fibres of the adventitia. Weigert's elastin stain. (× 3.)

At one point the blood-clot was bounded internally by the external elastic membrane, whereas elsewhere there were several layers of adventitia between it and the media (fig. 5).

Left popliteal artery: the appearances were similar to those seen in the right popliteal artery.

Left posterior tibial artery (from the lower part of the leg): there was no evidence of dissection, but in the loose connective tissue at some distance from the vessel there was a distinct blood-clot.

Right anterior and posterior tibial arteries, just below the termination of the popliteal: the vessels were embedded in a large mass of blood-clot, which encroached on their walls. In practically all regions the blood was in direct contact with the external elastic membrane but here and there was separated from the media by a distinct band of adventitia. (This applied to both vessels.)

Right posterior tibial artery (from the lower part of the leg): the walls of the vessel appeared intact in most of its circumference, but there was an extensive para-arterial clot, which at one point seemed to invade the adventitial layers and here it was separated from the media by a thin band of adventitia only (fig. 6).

In all the sections there was no obvious abnormality in the microscopic structure of the individual layers, apart from what could be caused by trauma, pressure, or artefact.

FIG. 6—Right posterior tibial artery from the lower part of the leg, showing para-arterial clot encroaching on the media in one sector. Hæmatoxylin and eosin stain. (× 3.)

Other organs: the stomach and intestines appeared normal, but the stomach still contained the remains of a large meal, and blood had infiltrated the base of the mesentery. The liver was small, pale grey, and "bloodless." The gall-bladder was normal. The spleen was slightly enlarged, pink, and rather soft. The pancreas was normal. The kidneys had a normal appearance, but in each blood was present in the pelvis. The suprarenal glands, urinary bladder, and testicles appeared normal, but the spermatic cord on each side was encased in clotted blood. The surface veins of the brain were engorged. The basal arteries appeared particularly thin and translucent. The brain itself showed nothing grossly abnormal when incised. At the base of the neck there was considerable œdema of the tissues, and the great veins were almost empty.

COMMENTS

We believe that this dissecting aneurysm is probably the most extensive on record. According to Shennan (1934), the aneurysm in Tessier's (1842) case was the longest which had been reported; the dissection extended from the ascending aorta upwards to the common carotid arteries and downwards to the popliteal. In our case we are certain that dissection had taken place as far as these limits, and we present evidence that the process had extended even further.

It is probable that dissecting aneurysm is a more frequent cause of sudden death than is generally realised, and that some cases at present registered (without confirmatory autopsies) as coronary disease are in reality cases of dissecting aneurysm. Ames and Townsend (1897) and Oppenheim (1918) state that spontaneous rupture of the aorta was met with once in 500 autopsies. According to Arenburg (1932) it is much commoner than rupture of the heart.

Although in many of these cases which are the subject of coroners' inquests a clinical history is unobtainable, we were furnished with certain brief but important facts. The symptoms of dissecting aneurysm depend on the underlying pathological mechanism. In most cases the dissection begins as a tear or rupture of the vessel wall, usually in the ascending aorta (primary rupture). This is indicated clinically by sudden and severe pain in the front of the chest accompanied by collapse. After a period (hours to days) in which there is amelioration of the more severe

symptoms the patient succumbs very suddenly and dramatically as a result of the external rupture of the aneurysm, usually into the pericardium. In our own case there was a typical sudden onset. However, from the story, the initial pain was referred to both lower limbs, which fact suggests that dissection began in the lower abdominal aorta. Hours later, just before death, a severe pain was experienced, which was described by the patient as "welling up" in the chest. This may have indicated terminal intrathoracic hæmorrhage.

In dissections beginning in the thoracic aorta it is usually possible to demonstrate with some precision the primary or initial tear of the inner coats. In our case this was not possible, for the inner layers in the thoracic and abdominal aorta were entirely separated from the outer coats when first examined and were already torn and fragmented in several regions. The external rupture in a typical case of dissecting aneurysm takes place at a point near the primary rupture in the ascending aorta, with terminal hæmorrhage into the pericardium. In our case there was hæmorrhage into the right pleural cavity, the loose tissues surrounding the thoracic aorta, and the lower retroperitoneal space in the abdomen, and along the line of several of the main branches of the aorta—e.g., common carotid, renal, and spermatic arteries and those of the lower limbs. Only a small amount of blood was found in the pericardial cavity. External rupture, therefore, had taken place in several situations and probably not simultaneously.

In the thoracic and abdominal portions of the aorta dissection had taken place in its usual situation—i.e., between the middle and outer two-thirds of the medial coat. The line of dissection in the vessels of the lower limbs was placed further out—i.e., between the media and the adventitia or in the adventitial layers. We conjecture that the hæmorrhages in the legs, which formed extensive para-arterial clots, probably took place in the earlier hours of the patient's illness; possibly they were formed as an oozing through the outer adventitial layers rather than by rupture at one or two points. It is difficult to gauge when and how the extensive hæmorrhage took place round the thoracic aorta, or when dissection of the pulmonary and coronary vessels developed, but it seems that these must have happened near the end, and that the intrapleural hæmorrhage was terminal.

The para-arterial clots found in the lower limbs lay along the line of the femoral and popliteal vessels and extended as far as the lower third of the legs along the course of the posterior tibial arteries. Microscopic sections showed dissection in the popliteal arteries of both sides and in the beginning of the anterior and posterior tibial arteries on the right side. The left posterior tibial artery in the lower third of the leg appeared normal, but some clot was seen in the section at a distance from the artery, which was obviously due to blood which had tracked down. The right posterior tibial artery, from the same approximate level, was intimately connected with para-arterial clot and at one point appeared to be separated from the medial coat of the vessel by a thin layer of adventitia only. It seems therefore that the extreme limits of dissection in the lower limbs were the popliteal artery on the left side and the lower third of the posterior tibial on the right.

Another feature of considerable rarity was the dissection of the pulmonary artery. So far as we are aware, there are only three reliable references in the literature, and in each of these the dissection affected the pulmonary artery (or its branches) only. Dissection in these cases was evidently caused by disease of that artery. In Durno and Langdon Brown's case (1908) there were a patent ductus arteriosus, a hypertrophied right ventricle, and atheroma of the pulmonary artery; in Duffield's case (1882) tricuspid valvular disease, an enlarged right ventricle, and advanced atheroma of the pulmonary artery; and in the case cited by Walshe (1862) "extensive calcareous concretions" in the pulmonary artery. In our case dissection of the pulmonary artery appears to have been an extension of the dissecting process in the aorta; the extravasated blood, having reached the level of the valves, being reflected, as it were, into the substance (media) of the pulmonary artery and extending into the right main branch but not into the left.

Dissection of a coronary vessel must be extremely rare and to our knowledge has not been previously described. The small quantity of blood in the pericardium may have been derived from the coronary dissection.

Comment must be made on the age of the patient. In Shennan's (1934) analysis of 300 cases only 5 occurred in the second decade (3 male and 2 female). The youngest patient was a boy of thirteen described by Wasastjerna (1903); Hübschmann's (1916) patient was fifteen; and the remaining 3 were aged seventeen, nineteen, and twenty. Ranking's (1860) case in the boy of nineteen is interesting, for the post-mortem appearances resembled those seen in our case: "two quarts of fluid blood in right pleura . . . the entire track of the aorta infiltrated with clotted blood . . . blood had been extravasated extensively between the folds of the mesentery and into the pelvic cellular tissues . . . pericardium healthy . . . heart medium size and healthy." The limits of the dissecting process were not described.

We do not propose to discuss in detail the causation and pathogenesis of our case. The extensive disintegration of the major portion of the aorta would render any conclusions from microscopic sections of doubtful value. Also there is paucity of facts from the clinical aspect. The heart was to all intents and purposes free from disease, and there was perhaps a rather surprising absence of any gross lesions in the coats of the vessels we examined. One can hardly attach significance to the few white cells found in the outer layers of the abdominal and ascending aorta—they may have been derived from the dissecting stream of blood. We are inclined to believe that the stress of defæcation was the immediate exciting cause; the acute symptoms came on immediately after defæcation on Feb. 3. We can offer no explanation of the history of backache immediately preceding this date. Medial degeneration (see Shennan 1934) was probably the underlying causal factor. However, in the relatively intact abdominal aorta (which we presume was the seat of primary rupture) we found little microscopical evidence of degenerative changes in the medial coats.

SUMMARY

(1) The biggest dissecting aneurysm on record is described. Dissection affected the whole aorta and its main branches, and the process extended into the lower limbs as far as the popliteal artery on the left side and the posterior tibial in the lower third of the leg on the right side.

(2) There was also dissection of the pulmonary artery and its right main branch. Hitherto, concomitant dissection of the pulmonary artery and of the aorta has not been described. Dissection of the pulmonary artery alone is very rare.

(3) The right coronary artery was dissected. This is probably unique.

(4) The patient was one of the youngest on record to have a dissecting aneurysm.

We wish to thank Mr. G. Wills Taylor, H.M. coroner for West Surrey, for permission to publish this case.

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COD-LIVER-OIL DRESSINGS:

THEIR MODE OF ACTION

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THE local treatment of infected wounds, burns, ulcers, amputation stumps, osteomyelitis, and some other affections with dressings soaked in cod-liver oil or covered with a thick layer of ointment containing in a neutral base (Vaseline) a large amount (25 per cent.) of cod-liver oil has come into prominence only during the last seven or eight years. Since the publications of Löhr (1934) over a hundred papers have been written on the subject, most writers recording their experience with the original or modified method of Löhr. Almost all authors record remarkable success as the result of this treatment, especially in otherwise intractable affections. A note in THE LANCET (1934) describes the method, some indications, and its effect and advantages.

Clinical and laboratory investigations were conducted simultaneously to ascertain the part played by various factors in yielding the good results.

According to Löhr (1934) the complete immobilisation given to the affected part by the combined plaster-of-paris and cod-liver-oil dressing provides the most favourable condition for healing. Although this factor is of primary importance in some cases, such as osteomyelitis and compound fractures, it does not seem to play such an important rôle in other conditions, such as burns and ulcers. In fact Zoltán (1936), Steel (1935), and others modified the original Löhr method by using, as an outer cover to the cod-liver-oil dressing, jaconet instead of plaster-of-paris and claim to have achieved equally good results. Both the jaconet and the plaster-of-paris serve the same purpose, in that they create a sealed "humid chamber" (the plaster only after some time, when its porosities had been sealed by the dried discharge from the wound and by the oil permeating it). This "humid chamber," according to Bier (1917), powerfully stimulates the proliferation of granulations and so speeds up the process of healing.

Löhr (1934), Schaer (1935), and Bosse (1935) emphasise the fact that cod-liver oil forms a protective and non-irritating layer on the surface of the wound and thus protects it from injury when the dressing is changed, for the separation takes place between the oily layers and not between the wound surface and the gauze, as happens when aqueous solutions are employed. Another advantage claimed is that the use of cod-liver oil makes this procedure painless and saves the patient from much suffering and shock. The same purpose is served by the fact that the dressing needs renewal only once in three to fourteen days.

Kümmel and Jensen (1936) assert that cod-liver oil imbibes dead tissue and accelerates liquefaction (necrolysis), thus cleaning the surface of the wound and removing the medium upon which bacteria feed and thrive.

Traxl, cited by Lauber (1934b), demonstrated with the help of Warburg's apparatus that the metabolic rate of leucocytes increased by 420 per cent. under the influence of cod-liver oil. This suggests that their vitality and hence probably their phagocytic powers are stimulated by the oil.

In an extensive series of experiments, Nordman and Hoegler, Bisceglie, Katzenstein and Knacke (all quoted by Lauber (1934b), and Minami and Tomikawa (1933) showed that vitamins A and D (which are contained in cod-liver oil) had a local growth-promoting and stimulating action on connective tissue and epithelial cells.

Lauber (1934a), Drigalski (1934), and especially Lundh (1936) and Saito (1937) proved in a conclusive series of experiments that vitamins A and D were absorbed through the surface of the wound into the general circulation and then exerted a beneficial action on the whole organism.

Löhr (1934a) and Kümmel and Jensen (1934) made observations which led them to conclude that cod-liver oil had a detoxicating effect on bacterial toxins.

Various authors have discussed the question of the bactericidal power of cod-liver oil and come to very contradictory conclusions. The present work was undertaken to investigate this last point, and in the course of it some new facts were discovered.

BACTERICIDAL POWER OF OILS

Ritsert, cited by Lansberg (1920), found that fats had a bactericidal action. Achard and Foix (1916–17) could not confirm this. Bitter (1911) found linseed oil to be bactericidal, but not olive oil. Koch, cited by Goertzen (1935), and McMaster (1919) state that olive and linseed oils as well as liquid paraffin are devoid of bactericidal properties. Lansberg (1920) found that oils were sterile in the usual commercial preparations; that olive oil, if contaminated, became sterile again in ten days; and that the bactericidal power of different oils, and even separate samples of the same oil, varied but had no relation to the amount of free or unsaturated acids present. Lansberg thinks that the factors responsible for the bactericidal action of oils are lack of air and lack of water. Löhr (1934a) demonstrated in an extensive series of experiments that emulsions of staphylococci, streptococci, and *Bacterium coli* lost their vitality in cod-liver oil in three hours but survived in liquid paraffin for more than fourteen days. Löhr suggests that the bactericidal action of cod-liver oil depends on the "increased surface tension of the oil, which prevents the bacteria from budding." Löhr here seems to imply that the surface tension of cod-liver oil is greater than that of water. Since this explanation of the bactericidal action has been quoted by other writers, it seemed desirable to investigate the matter more closely.

Reference to various textbooks did not yield any exact information concerning the surface tension of cod-liver oil. An approximate determination was there-

fore carried out by the drop method, the instrument being standardised by the use of distilled water, which, according to Hodgman's "Handbook of Chemistry and Physics," has a surface tension of 73·13 dynes/cm. at 16° C. The results are as follows: ethyl alcohol 22·77 dyn/cm., olive oil 35·78 dyn/cm., cod-liver oil 35·78, and liquid paraffin 34·15 at 16° C. The values for alcohol and olive oil agree with those recorded by other workers and show that the method employed gives approximately correct results. It will be seen that the values for liquid paraffin and cod-liver oil are very nearly equal and that they are both somewhat less than half that of distilled water. It follows that the suggestion that cod-liver oil has a surface tension higher than that of water is entirely wrong. Further, the fact (mentioned by Löhr) that liquid paraffin has no bactericidal action in spite of its almost identical surface tension implies that the explanation of the action of cod-liver oil as dependent on its surface tension cannot be accepted.

Goertzen (1935) experimented with ten different oils and sixteen varieties of bacteria, but found that, out of the ten oils, nine, including cod-liver oil, were without bactericidal action, as revealed by his technique (exposure of the bacteria to the oil for forty-eight hours in the presence of a nutrient medium). He concludes that the efficiency of the Löhr dressings does not depend on the bactericidal action of cod-liver oil.

From this brief survey it seems that opinions are very conflicting, presumably in consequence of the different methods adopted by the various workers in their investigations. The present investigation may be considered under three headings: (1) the influence of oils on bacteria in a nutrient medium; (2) the influence of oils on bacteria lacking a nutrient medium; and (3) the effect of ultraviolet irradiation on the bactericidal power of cod-liver oil, and the rôle of organic peroxides.

(1) *The influence of oils on bacteria in a nutrient medium* was investigated as follows:—

Method A. Slopes of 1 per cent. glucose-agar were prepared, a very small amount of agar being taken, so that the upper limit of the slope was 2 in. from the bottom of the test-tube. Over this the oil was poured to stand 3 in. from the bottom of the tube, thus covering the agar completely. A platinum-loopful of bacteria from a 24-hour sloping-agar culture was then taken and inoculated on the surface of the agar slope under the oil. This was put into the incubator at 37° C., successive subcultures being taken at 24-hour intervals and incubated, the results being noted after twenty-four hours.

From preliminary experiments it was found that staphylococci gave positive growth in subcultures taken up to about two weeks in the case of cod-liver oil, and that subcultures taken after this period were sterile. In the case of liquid paraffin, cultures could be obtained after five weeks. This was proof that cod-liver oil had a very slow but distinct bactericidal effect. To ascertain the part played by vitamins, a sample of cod-liver oil was enriched with vitamins A and D by the addition of two drops of halibut-liver oil to each c.cm. of cod-liver oil. (One drop of halibut-liver oil contains 1250 International Units of vitamin A and 62 of vitamin D; and 1 c.cm. of cod-liver oil contains 600 I.U. of vitamin A and 85 of vitamin D.) Method A was employed and from the results, given in table I the following conclusions are drawn:—

(1) Staphylococci, even in a nutrient medium, succumb under cod-liver oil in two weeks.

(2) *B. coli* are resistant to cod-liver oil in a nutrient medium.

(3) The addition of vitamins A and D does not influence (1) and (2).

(4) Both staphylococci and *Bact. coli* survive indefinitely on a nutrient medium covered with liquid paraffin.

TABLE I—INFLUENCE OF OILS AND VITAMINS ON BACTERIA ON A NUTRIENT MEDIUM

Oils and vitamins	Subcultures made after— 1 day	2 days	11 days	13 days	15 days	16 days	22 days
	Staphylococci						
C.L.O. .	††††	††††	††	†	—	—	—
C.L.O. and halibut-liver oil .	††††	††††	†††	†	—	—	—
Liquid paraffin .	††††	††††	††††	††††	††††	††††	††††
	B. coli						
C.L.O. .	††††	††††	††††	††††	†††	††	†††
C.L.O. and halibut-liver oil .	††††	††††	††††	††††	†††	††	†††
Liquid paraffin .	††††	††††	††††	††††	††††	††††	††††

C.L.O. = cod-liver oil. † = plus.

(2) *Influence of oils on bacteria lacking a nutrient medium.*—Preliminary experiments showed that it was very difficult to prepare a bacterial emulsion by simply taking a loopful of bacteria from the surface of an agar culture and stirring the oil with it; the bacteria stuck together and in spite of every effort remained clumped. When a platinum-loop is introduced into the oil to make a subculture, it is impossible to say, with any degree of certainty, whether or not the clear drop of oil on the loop after withdrawal contains bacteria, and therefore the results cannot be considered reliable. The following method was devised to obviate this difficulty.

Method B. Fine sterile sand was poured into small (3 in. × ½ in.) test-tubes to a depth of ¼ in. Over it the oil was poured to stand 1 in. above the level of the sand. A loopful of bacteria from the surface of an ordinary sloping-agar 24-hour culture was then introduced and stirred first slowly with the sand and then vigorously for 2 min. The whole was then placed in the incubator.

For the purpose of subculturing, some of the sand was removed after stirring again with a platinum loop and smeared over the surface of a sterile agar slope.

This procedure gave reliable results. The slopes were examined after 24 hours' incubation, and summary of the results is given in table II. Subcultures from the oil on to the surface of agar were made daily from liquid paraffin and olive oil, hourly from cod-liver oil, and quarter-hourly from linseed oil. From the results the following conclusions are drawn:—

(1) Liquid paraffin, although it excludes air and water from the environment of bacteria suspended in it (Lansberg 1920) and has a different surface tension from water (Löhr 1934a), does not have any influence on the vitality of the organisms for thirty-five days, which was the limit of the experiment.

(2) Olive oil kills bacteria suspended in it in seven to ten days.

(3) Cod-liver oil has the same effect in seventeen to twenty-two hours.

(4) Linseed oil (boiled) kills bacteria in one to one and a quarter hours.

TABLE II—THE INFLUENCE OF OILS ON BACTERIA LACKING A NUTRIENT MEDIUM

Oil	Organisms	Abundant growth for—	Diminished growth until the—	Sterile from the—
Liquid paraffin	*Bact. coli*	35 days	..	..
	Staphylococcus	35 ,,	..	..
	B. pyocyaneus	35 ,,	..	..
Olive oil	*Bact. coli*	4 days	9th day	10th day on.*
	Staphylococcus	5 ,,	7th ,,	8th ,,
	B. pyocyaneus	4 ,,	6th ,,	7th ,,
Cod-liver oil	*Bact. coli*	21 hours	..	22nd hour on.
	Staphylococcus	16 ,,	20th hour	21st ,,
	B. pyocyaneus	12 ,,	16th ,,	17th ,,
Linseed oil	*Bact. coli*	15 min.	60th min.	75th min. on.
	Staphylococcus	15 ,,	60th ,,	75th ,,
	B. pyocyaneus	30 ,,	45th ,,	60th ,,

* on. = onwards.

It might seem that, of the oils tested, linseed oil is the most suitable for the treatment of wounds, in view of its strongest bactericidal power. However, it was noticed that this oil, when brought on to the surface of agar with the loop for subculturing purposes, dried up very quickly and formed a crust or scab. On the surface of a wound such a scab would constantly irritate tender granulations, in this way destroying the beneficial effect of the bactericidal action of the oil.

(3) *Effect of ultraviolet irradiation on the bactericidal power of cod-liver oil, and the rôle of organic peroxides.*—Harris, Bunker, and Milas (1932) found that "the bactericidal properties of vapour arising from the surface of vegetable and animal oils which had been irradiated with ultraviolet rays was proportional to the increase in peroxides formed in these oils during the process of irradiation." Stevens (1936) demonstrated that salt solution, shaken with irradiated cod-liver oil, "ab- or ad-sorbed" peroxides from it and was then found to exert bactericidal action on hæmolytic streptococci. This action was abolished by the addition of sodium thioglycolate—a reducing agent—and evidence was found that the action did not depend on the presence of aldehydes.

In the present work it was observed that the suspension of bacteria in the oil settled on the surface of the sand after a time, and, when the oil had become sterile, the film of bacteria had acquired a brownish colour, which became still deeper on standing for a few days. This suggested that oxidation had taken place, and that the substances responsible for the bactericidal action of the oils might be the organic peroxides. To test it, a further series of experiments was undertaken. Two points required to be elucidated: (1) the action of irradiated cod-liver oil on bacteria, and (2) the relation between the bactericidal properties of an oil and its content of peroxides.

Method C. Cod-liver oil 50 c.cm. was poured into a flat porcelain vessel, forming a layer 0·5 cm. deep, and subjected to the rays of a mercury-vapour quartz lamp from a distance of 50 cm. for three hours in accordance with the method of Stevens (1936). The irradiated oil was now tested by method B, the three other oils and liquid paraffin being used as controls.

The controls gave the same results as in table II, and the irradiated oil gave results summarised in table III. These tests were repeated on several occasions with consistent results. Table III, when compared with table II, shows that after irradiation the bactericidal power of cod-liver oil is enhanced. For the purpose of estimating the amount of organic peroxides present in the respective oils, a modification of a method described by Marks and Morell (1929) has been employed. The method is based on the fact that organic peroxides oxidise potassium iodide in an acid solution, and the liberated iodine can be titrated with sodium thiosulphate with starch as an indicator.

TABLE III—COD-LIVER OIL IRRADIATED BY METHOD C

—	Abundant growth for—	Diminished growth until the—	Sterile from the—
Bact. coli	150 min.	—	3rd hour on.
Staphylococcus	75 ,,	150th min.	3rd ,,
B. pyocyaneus	30 ,,	—	60th min.

Method D. Oil 1 g. is thoroughly shaken with 25 c.cm. of glacial acetic acid, whereupon 1 c.cm. of a 50 per cent. solution of sulphuric acid is added. The mixture is left to stand for three hours, and then 2 c.cm. of a cold saturated aqueous solution of potassium iodide is added. After forty-five minutes 2 c.cm. of the fluid is pipetted off and diluted with distilled water, and the liberated iodine is immediately titrated with N/100 $Na_2S_2O_3$, two drops of a 2 per cent. solution of starch being first added as an indicator.

The experiments are summarised in table IV, which shows that three controls were used: water, acid, and benzoyl peroxide. The figure for active oxygen in the last column depends on the length of time during which the action is allowed to proceed and so cannot be taken as an absolute measure of the amount of peroxide present. These experiments have been repeated many times, and the figures given are typical of the results obtained. It will be seen that cod-liver oil yields rather more active oxygen than does olive oil, and that the irradiated cod-liver oil contains still more. The highest content of all is found in linseed oil.

TABLE IV—ESTIMATION OF ORGANIC PEROXIDES BY METHOD D

Bottle No.	Ingredients	Amount of N/100 $Na_2S_2O_3$ used up by 2 c.cm. from each bottle	Equivalent to mg. of active oxygen in 1 g. of oil
1	Distilled water 25 c.cm.	0·01	(0·01)
2	CH_3COOH 25 c.cm.	0·1	(0·11)
3	Olive oil 1 g.	1·0	1·16
4	Cod-liver oil 1 g.	2·2	2·35
5	Irradiated cod-liver oil 1 g.	2·8	3·24
6	Linseed oil 1 g.	3·5	4·06
7	Benzoyl peroxide 1 g.	40·0	46·40

In table V the bactericidal action of various oils is compared with their content of peroxides. It will be seen that there is an inverse relationship between the length of time required of the oil to kill the bacteria and the peroxide content. Attempts were made to remove the peroxides from the irradiated and non-irradiated oil, to see whether the bactericidal power was thereby abolished; but serious difficulties were encountered in this attempt. The oil was treated

TABLE V—RELATION BETWEEN BACTERICIDAL ACTION OF OILS AND THEIR PEROXIDE CONTENT (METHODS B AND D)

Oil	Mg. of active oxygen in 1 g. of oil	Time in which full bactericidal action is reached on—		
		Bact. coli.	Staphylococci	*B. pyocyaneus*
Olive oil	1·16	240 hrs.	192 hrs.	168 hrs.
Cod-liver oil	2·35	22 ,,	21 ,,	17 ,,
Irradiated cod-liver oil	3·24	3 ,,	3 ,,	1 hr.
Linseed oil	4·06	1½ ,,	1½ ,,	1 ,,

with dilute sodium thioglycolate (a reducing agent) or with active charcoal (an adsorbent). After the treatment the oil was found still to retain the greater part of its peroxides. The possibility is therefore not excluded that factors other than the peroxides may contribute to the bactericidal action of the oil.

DISCUSSION

The first object of this work—namely, to establish whether or not cod-liver oil has any bactericidal power—has been achieved. There can be little doubt that the striking results obtained by many authors with cod-liver-oil dressings are due, in some degree at least, to the fact that the oil has a definite bactericidal power. The question, however, arises as to why the use of cod-liver oil in dressings should possess advantages over that of other bactericidal preparations. An important factor in this connexion is the fact that the cod-liver-oil dressing is non-irritant to the tissues. Indeed, so far from damaging these, it supplies them with vitamins and possibly other forms of nourishment, and it mechanically protects the young granulation-tissue and epithelium from damage by the dressing. The stimulation of leucocytes by cod-liver oil, observed by Traxl (Lauber 1934b), may also contribute to its beneficial effect. Perhaps these various factors, together with its bactericidal action, may explain the clinical efficiency of cod-liver oil in dressings.

In the course of this work it has been found that the bactericidal power of cod-liver oil is substantially enhanced by irradiation with ultraviolet rays from a mercury-vapour lamp. Parallel with this, the peroxide content is increased. It is to be expected that such irradiated oil may prove even more efficient than the non-irradiated product for clinical use. The irradiated oil should therefore be given a clinical trial.

SUMMARY

(1) A brief survey is given of the views of various authors on the mode of action of cod-liver oil dressings.

(2) Cod-liver oil has a definite bactericidal power.

(3) Irradiation of cod-liver oil with ultraviolet rays greatly enhances this power.

(4) The bactericidal action of an oil is closely related to its content of peroxides.

(5) The merits of cod-liver-oil dressings are emphasised, and a clinical trial of irradiated oil is advocated.

I am indebted to Lieut.-Colonel A. G. McKendrick and Dr. W. O. Kermack for their help and to the council of the Royal College of Physicians of Edinburgh for kindly providing all the necessary facilities.

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MINIATURE RADIOGRAPHY

WITH TWO TUBES, TWO CAMERAS, AND ONLY ONE GENERATOR

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M. GIBSON
GRADUATE I.E.E.

THE advantages and technique of miniature radiography—i.e., photography of a still image produced with X rays on a fluorescent screen—have previously been described in these columns (*Lancet* 1939, Dormer and Collender 1939). The apparatus here detailed (see figure) abolishes any loss of time in placing the patients in position for mass radiography.

Rough specification.—Rotalix tubes and camera-screen tunnels to be mechanically coupled and capable of vertical movement. Besides the Rotalix tubes being counterbalanced, all four corners of the camera-screen tunnel should be counterbalanced. The camera end may have to be placed between two vertical guide rails because of the weight of the Collender camera. The apparatus could be so arranged that the action of the exposure switch operates a mechanism for turning on the film.

X-ray generator.—Condenser-discharge type giving 50–90 kVP, in steps of 2½ kV, or in tens and units. About 350 mA tube current should be used and 5 ft. screen-focus distance. These could be fixed. Exposure time about 3/100 sec.

Radiographic output.—The build-up on a Phillips condenser-discharge plant takes about 15 sec.; therefore one exposure every 30 sec. is possible. This gives

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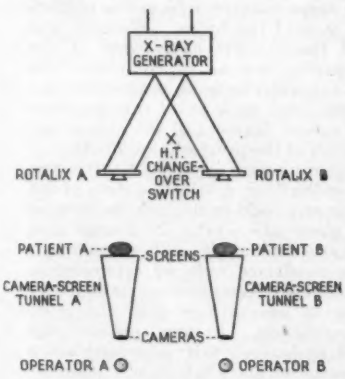
us 600 exposures in 5 hours with two operators. The processing of a spool of seventy-two pictures takes about 30 min. If the two operators have small-tank equipment, they can do about ten spools in 2½ hours—i.e. 720 radiograms. Special cooling may be necessary for the tubes, because, in spite of the change-over, they are to work almost continuously for 5 hours a day.



Sequence of events. — Operator A places patient in position, adjusts the height of his apparatus, and takes his picture. Meanwhile operator B has placed his patient in position, has adjusted the height of his apparatus, and is waiting with one hand on the H.T. change-over switch. As soon as A's exposure has been made, B switches over the high tension and takes his picture. Meanwhile A has set up his second patient and is ready to change over the high tension. In this way no time is lost in placing patients in position. Some form of marking device must be used, the number corresponding to the patients' numbers, either an automatic device in the Collender camera or a hand-manipulated device on the fluorescent screen.

The plant suggested would be cheaper, less elaborate, and more easy to operate at high speed than one with electric lifts and other devices. The economy of one generator enables one to be designed for the heavy duty imposed on it.

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Clinical and Laboratory Notes

CONGENITAL CYST OF ROUND LIGAMENT OF LIVER

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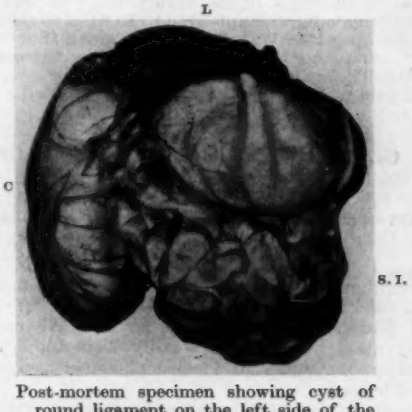
A CYST of the round ligament of the liver is among the rarest of abdominal tumours, and the following case appears to be the third recorded in the English and American literature.

CASE-RECORD

The patient, the fifth child of healthy parents, was a male born at term. Labour was normal, and the baby's weight at birth was 8¼ lb. Shortly after birth he was cyanosed, and the abdomen was noticed to be enlarged. The doctor in attendance, diagnosing ascites, tapped the abdomen and withdrew 320 c.cm. of straw-coloured fluid, which was not examined. When eight weeks old the patient developed œdema of the scrotum and of the legs, more severe on the right side. Subsequently he was referred to one of us and examination revealed an elongated elastic tumour on the right side of the abdomen. Hydronephrosis was suspected, and he was admitted to hospital.

He was a small baby four months old, weighing 10 lb. 6 oz.; his colour was good, and there was no œdema. On the right side of the abdomen an elastic swelling could be felt extending from behind the costal margin to the pelvis; it did not appear to move on respiration. The urine contained a trace of albumin, many renal epithelial cells, and a few leucocytes, but no red cells or casts. Culture gave a growth of *Bacterium coli*. A blood-count showed erythrocytes 3,750,000, hæmoglogin 67 per cent., and leucocytes 11,500 (polymorphs 24 per cent., lymphocytes 76 per cent.). No abnormal physical signs were found in other systems. On intravenous pyelography the right renal calyces appeared normal. A barium enema showed that the intestines were displaced to the left by a tumour on the right side of the abdomen.

The infant died from an intercurrent infection ending in gastro-enteritis. At autopsy both kidneys proved to be normal, but a large sausage-shaped cyst was found lying inside the peritoneal cavity and lateral to the ascending colon, to which it was attached by two friable adhesions. The cyst appeared to be lying between two layers of the ligamentum teres, and the umbilical veins were



Post-mortem specimen showing cyst of round ligament on the left side of the picture with the liver above. (L = liver; C = cyst; S.I. = small intestine.)

stretched round it. It contained an alkaline fluid, with a specific gravity of 1·011, which was analysed as follows:—

Protein	1·25 per cent.
Chlorides	present
Urea	99 mg. per 100 c.cm.
Mucus	present + +
Diastase	absent
Deposit	scanty; a few small cells, ? leucocytes.

The inner surface of the cyst was smooth and covered with a little mucus. No teeth, hair, or other evidence of teratoma were found. A section showed a single layer of lining endothelium but no epithelium.

COMMENT

During life the diagnosis was in some doubt, with the consensus of opinion in favour of a cystic kidney or a cyst in the mesentery. An exploratory operation had been decided on, when the child developed the fatal gastro-enteritis. Hydronephrosis was suggested by the presence of renal epithelial cells in the urine and by the urinary infection but was excluded by

pyelography. Careful post-mortem dissection showed that the cyst was obviously in the ligamentum teres, and we have found only two records of similar cases.

Henderson (1909), reporting the case of a male, aged 41, from whom a cyst of the ligamentum teres was removed by W. J. Mayo, remarked that he had never previously heard of this condition, whereas cysts of the round ligament of the uterus were not uncommon.

Henderson's patient had developed symptoms eight years previously, when he said that, on attempting to stand up after stooping to lace his shoes, he was seized with a violent umbilical cramp. Soon after this an abdominal tumour was found by his physician, and a laparotomy was advised but deferred. The tumour gradually increased in size until it was as big as a human head. He made a successful recovery after its removal.

Wakeley and MacMyn (1931) reported a case of cyst of the ligamentum teres and also described two "non-parasitic cysts of the liver," which they considered might have the same pathology though occupying a different position.

Their patient was a woman, aged 54, admitted for indigestion; four months previously she had noticed a lump in the upper part of her abdomen. She had a round mass as big as a golf ball in the midpyloric plane to the right of the middle line; it was only slightly movable and appeared to be fixed to the liver. At the operation Wakeley found a small thin-walled cyst occupying the upper end of the ligamentum teres. The patient made a good recovery. The cyst fluid was alkaline to litmus and contained a trace of albumin and urea, but no sugar, pseudomucin, or bile. The wall of the cyst was fibrous and contained some smooth muscle tissue; it had an endothelial lining.

The ligamentum teres is derived from the obliterated left umbilical vein of the fœtus. Wakeley and MacMyn point out that a cyst could arise if the obliteration were partial instead of complete. An endothelial lining can secrete fluid, and cysts are known to be formed from such fœtal remains elsewhere—e.g., in the round ligament of the uterus and in the funicular portion of the processus vaginalis.

A cyst of the ligamentum teres can easily be mistaken for a parasitic cyst of the liver, cystic dilatation of the gall-bladder, a cystic or a solid tumour of the liver or the kidney, or a pancreatic cyst. Peritoneal and ovarian cysts might also simulate it. When suspected, its presence can be confirmed only by laparotomy, and the right treatment is to remove the cyst to avoid complications, such as hæmorrhage into the cyst, torsion, and strangulation. In our patient the condition simulated hydronephrosis, especially since there was a complicating urinary infection. Possibly this infection was due to partial obstruction of the ureter on the affected side.

We wish to thank Dr. R. J. V. Pulvertaft for the histological examination and for supplying us with a photograph of the specimen.

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GLUTEAL AND FEMORAL CLONUS

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ALTHOUGH patellar clonus and ankle clonus are well known in pyramidal-tract lesions, gluteal clonus and femoral clonus seem so far to have escaped observation. Yet both are easily elicited and are of considerable value in localising higher pyramidal tract lesions.

In *gluteal clonus* there are seen successive rhythmical muscle spasms extending over the whole gluteal muscle

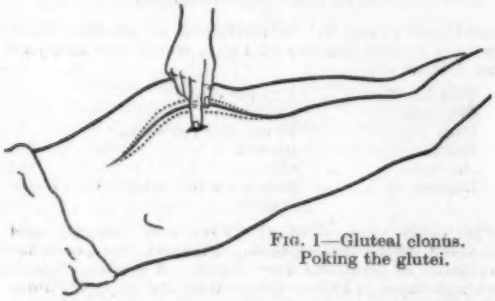


FIG. 1—Gluteal clonus. Poking the glutei.

group. They are produced by a sudden poking of the gluteal muscles with the fingertip (fig. 1). This clonus is, as it were, an extension of the better known gluteal reflex which consists of one single contraction of the muscles on stroking the gluteal region. The spinal segments concerned in both are lumbar 4 and 5. During the two years which have passed since my first observation, I have had numerous occasions to

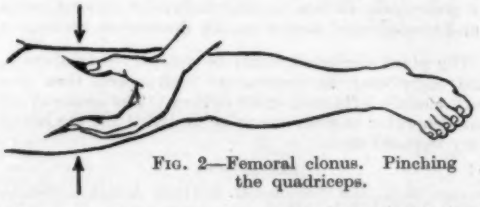


FIG. 2—Femoral clonus. Pinching the quadriceps.

induce gluteal clonus. The following varieties are met with.

(1) Double sided, of equal intensity. (2) On one side more vigorous, on the other side less expressed. (3) Appearing only on one side.

Femoral clonus consists of multiple, rhythmic twitchings in the quadriceps or hamstring muscles upon sudden pressure exerted by hand, or in less

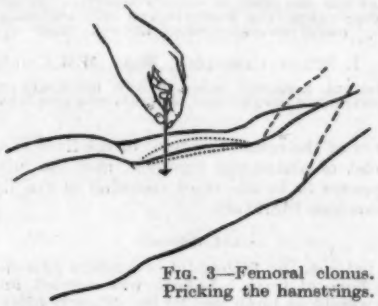


FIG. 3—Femoral clonus. Pricking the hamstrings.

characteristic cases, evoked by a pinprick. Sometimes the hamstring clonus is associated also with flexion of the knees (figs. 2 and 3). The spinal segments concerned in femoral clonus are lumbar 5 and sacral 1.

MEDICAL SOCIETIES

ROYAL SOCIETY OF MEDICINE

SECTION OF OTOLOGY

IN his presidential address on Nov. 3 Dr. T. RITCHIE RODGER discussed

Syphilis as seen by the Aural Surgeon

He said that the surgeon should have the possibility of syphilis continually in mind. Of 500 cases of syphilis seen by Dr. Rodger in ten years the majority attended on account of throat and nose symptoms; 94 per cent. gave a positive Wassermann reaction and the remainder showed equivocal signs which justified the diagnosis. In hereditary syphilis the ear affections fall into two main classes, the early and the late, or, as French otologists have it, *précoce* and *tardive*, and these probably correspond to the secondary and tertiary stages of the disease. The early forms, meningo-neuro-labyrinthitis and oto-labyrinthitis, occur in the first two years of life and provide at least 25 per cent. of the deaf mutes. The late form begins most often between the ages of 8 and 16, and the patient does not lose his speech, but commonly speaks with the monotonous voice peculiar to the very deaf.

In the acquired form of the disease a primary sore on the auricle is rare. In the secondary stage condylomata may develop in the meatus, syphilides on the auricle, and oto-labyrinthitis in the middle ear. The most common ear affection at this stage, however, involves the perception apparatus, and is a meningo-neuro-labyrinthitis, with particular involvement of one part or another of the nerve tract. In the tertiary stage there may be gummata or ulceration in the meatus or on the auricle. Middle-ear involvement is rare, the most common ear condition again being neuro-labyrinthitis. Oto-labyrinthitis or neuro-labyrinthitis may be associated with tabes dorsalis.

Mr. F. W. WATKYN-THOMAS said that aural surgeons are too apt to overlook the possibility of syphilis being the cause of an aural condition. He recalled the case of a man of about 40 who had been slightly deaf for some years, and then suddenly went almost completely deaf. He thought at first that it was one of those cases of oto-sclerosis which flared up after a cold or some such trouble, but he discovered eventually that the man had had a positive Wassermann, and he improved to a certain extent under antisyphilitic treatment.

Dr. DAVID NABARRO said he had seen remarkably few cases of deafness among the many congenital syphilitics he had examined; he had kept no record, but they would not be more than 10 out of 500. Sometimes in the course of treatment it would be stated that a syphilitic child had become deaf, but this might be due to other causes than nerve deafness —wax, middle-ear catarrh or blockage in the eustachian tube.

Mr. T. B. LAYTON suggested that there were two groups of cases of deafness among congenital syphilitics: in one the aural condition was manifested at the age of 20 or 21, when the only symptoms were deafness and keratitis, while in the other group the condition showed itself in childhood.

Mr. E. D. D. DAVIS said he had the impression that nerve deafness was nothing like so common as optic atrophy in tabes and G.P.I.

Mr. G. J. F. ELPHICK mentioned a case in which the diagnosis between arsenical injury to the labyrinth and a syphilitic lesion was in doubt. The patient had the most acute condition of secondary syphilis he had ever seen. After some treatment his deafness became much worse, and it was ultimately found to be probably due to the arsenical treatment. This was stopped temporarily, but the man was now totally deaf.

Mr. R. G. MACBETH recalled a case of a man of 40 who had been treated for congenital syphilis since he was 12. Deafness was not very pronounced until he was 20, when it became progressive and went on to almost complete loss of hearing. A few years ago he showed a condition clinically indistinguishable from Menière's complex.

Mr. SCOTT STEVENSON said he had suspected for a long time that many cases of nerve deafness were really syphilitic, and he wished that the procedure carried out by Jackson in Philadelphia were possible in this country—namely, that every patient entering the clinic had a Wassermann done as a routine.

REVIEWS AND NOTICES OF BOOKS

Hospital Public Relations

By ALDEN B. MILLS, managing editor of the *Modern Hospital*. Chicago: Physicians' Record Company. 1939. Pp. 361. $3.75.

VOLUNTARY hospitals are inclined to hold themselves aloof from the general public, and hospital administrators have seldom tried to interpret to the public the functions of their hospitals. This instructive book aims at telling how to set about scientifically constructive publicity. With characteristic American comprehensiveness, its author says: "A public relations program is a conscious, sincere, directed endeavor to create and strengthen contacts which contribute to the development of mutual understanding, good-will and respect between an institution (or business) and its public." A hospital must not expect the public to come to it the whole nor even half way. Propaganda should try to help the public by informing them what the hospitals do and how they may judge the quality of hospital services. Many of the problems of American hospitals are identical with our own, but in money-making efforts—apart from contributory schemes—they are undoubtedly ahead of us. In propaganda, "while it is important to harness the emotions, it is vital to satisfy the intellect. In a short intensive fund-raising campaign utilising the high pressure methods so common in the twenties, results were often achieved with appeals and claims that could not stand the light of critical analysis. But the era of such campaigns seems to be drawing to a definite close. Today people do not respond so readily to the 'tear-jerkers' and the 'sob-sisters.' . . . Hospitals are learning also that there are emotional recoils to purely sentimental appeals. These recoils may do injury to the hospital that money cannot erase."

The public relations programme envisaged is not designed solely for obtaining gifts for the hospital. Increased patronage, higher quality medical and nursing staff, improved relations with employees and a better standing with legislative groups are other goals. Good hospital service is regarded as the very corner-stone of a sound and effective public relations programme. The cost of such a programme might

represent 0·5 per cent. of a hospital's total budget, but if 2·0 per cent. is allowed the programme is so much the more useful.

Hospital Organization and Management

(3rd ed.) By Capt. J. E. STONE, F.S.A.A., F.R.Econ.S., consultant on hospital finance, King Edward's Hospital Fund for London; secretary of the Birmingham Hospitals Centre. London: Faber and Faber. 1939. Pp. 920. 31*s.* 6*d.*

EVERY branch of knowledge has its standard works, and this most valuable book must rank as the authoritative basis of an applied science which though recent is nevertheless of the greatest importance in modern society. The author reveals a universality of wisdom—the hallmark of genius—although his basic ability was apparently in the realms of finance. The book covers in detail the whole range of hospital technicalities from the structural to the dietetic. No matter of the slightest importance is omitted and the relevant findings of the numerous commissions, Royal and otherwise, are summarised along with the effects of the Local Government Act of 1929.

The haphazard local provision and lack of unified and uniform organisation is emphasised throughout, while the author pleads for team work by hospitals of the same quality as that expected from the staffs which serve the institutions. He favours the system of regional planning and control. A life-time of intensive experience and profound study has been made available to those who are engaged in securing the maximum efficiency of individual hospitals or groups of hospitals. No hospital administrator should be without a copy of this book.

Technique of Analytical Psychotherapy

By WILHELM STEKEL. London: John Lane, The Bodley Head. 1939. Pp. 408. 21*s.*

IN his latest book Stekel gives a clear statement of his technique for short analysis lasting only three to four months. Of particular interest is his advice on such practical points as the choice of patient, the conduct of the first interview, how active the analyst should be in explaining motives determining the patient's illness, when to demonstrate the existence of a transference situation to the patient, and so on. All this is extremely useful to the student of psychotherapy, for whom very inadequate training facilities still exist either in this country or America, and who in most cases is forced to develop his own technique. The pity is that as yet no one method of psychotherapeutic training meets with the approval of psychiatrists in general, and all, including Stekel's method, are open to criticism.

Stekel avoids the prolonged passive orthodox psychoanalytic method of free association, and in a comparatively short time claims to have an "intuitive" insight into the patient's condition, which justifies him in putting forward certain active interpretations. To illustrate this "intuitive" method he gives numerous clinical histories, but the result is far from convincing as in the brief histories only such data as support the final interpretation are given. Over and over again one comes across statements which entirely lack confirmation, as, for instance, in the chapter on "subsidiary transference." Stekel describes to what extent a patient will resist the formation of a transference for the analyst, and says "Afraid of the homosexual transference a man may fall in love with a girl and tie himself to her for life"—surely a very simple explanation for the analyst's failure to establish rapport with his patient. Again in Chapter 23 he says, "The patient will regard the doctor as in the line of succession of those authorities with whom he has been in lifelong conflict and against whom his illness has been a treasured weapon. The old spirit of defiance is marshalled to vanquish the doctor and the treatment becomes an open or masked struggle in which the analyst, though victorious, must often simulate defeat." Thus Stekel claims that many patients who are in reality "cured" by the analysis do not give the credit to the analyst and only later relinquish their symptoms when treated by, say, a herbalist.

But, although one may not agree with some of Stekel's deductions, the value of this book to psychotherapists is unquestionable; he is always stimulating, and discusses at length many of the problems which constantly arise in a psychotherapeutic practice. This is one of the best and most informative books on the subject which has appeared.

Recent Advances in Anæsthesia and Analgesia

(3rd ed.) By C. LANGTON HEWER, M.B. Lond., D.A., anæsthetist and demonstrator of anæsthetics, St. Bartholomew's Hospital, London. London: J. and A. Churchill. 1939. Pp. 333. 15*s.*

IN the two years since the publication of the second edition of Dr. Hewer's admirable little work the most remarkable advances in anæsthesia have been on the academic rather than the practical side. The institution of the diploma of anæsthetics by the Royal Colleges and the setting up of a chair of anæsthetics at Oxford are likely to have far-reaching effects compared with which variations in technique seem insignificant. But one of these is noteworthy—viz., the increased popularity of Pentothal. Dr. Hewer points out afresh that a 5 per cent. solution is preferable to the 10 per cent. at first recommended because it is much less likely to cause irritation if, as often happens, some of the solution enters the tissues instead of going direct into the vein. An inquiry in wards where many patients have received pentothal injections shows that a sore arm is no unusual phenomenon.

The third edition of this book remains one of the most complete and carefully compiled accounts of modern anæsthetic principles and practice.

Everyman in Health and Sickness

By Dr. HARRY ROBERTS and others. London: J. M. Dent and Sons. 1939. Pp. 739. 6*s.*

WHEN this book was first published in 1935 at 12*s* 6*d.* we thought it good value for the money (*Lancet*, 1935, **2**, 833). The publishers have now doubled its value by bringing out a new cheap edition at 6*s.*

Pleasant Food for Diabetics

By A. SANDERS, formerly sister at St. George's Hospital, London. London: Faber and Faber. 1939. Pp. 138. 3*s.* 6*d.*

EXCELLENT though the recipes in this book appear to be, we fear that time must pass before the patient with diabetes follows the instructions on p. 74 in which he kneads butter into Soya flour and adds as much marrow jam as he may desire, the basin, covered with greased paper, being then steamed for one hour. An untimely appetite is stimulated as we read of coffee trifle served with whipped cream on top; asparagus served with melted butter; the English sausage which contains four rashers of streaky bacon; rather fat, a well-beaten egg, and half a pint of stock; or the banana cream in which the fruit is the last item in a rich formula. But the mere reading of such suggestions is an encouragement to optimism, and we hope that the day is not far distant when this valuable little book may cheer the home of many a sufferer from diabetes.

THE LANCET

LONDON: SATURDAY, NOVEMBER 11, 1939

EMPTIED SANATORIUMS

"Any consumptive requiring institutional treatment should receive it and accommodation is available for such treatment."—The MINISTER OF HEALTH replying to a question in the House of Commons on Oct. 9.

THE effect of a state of war on tuberculosis is well known from past experience, and early in September the tuberculosis service in this country was fully alive to the difficulties that lay ahead if its powers were left unimpaired and its hands still untied. For the past year the Joint Tuberculosis Council had been working out with the M.O.H. tuberculosis group the organisation of a service for a time of national emergency. It came therefore as a slap in the face to those who were devoting their lives to the eradication of the disease when they found that in the elaborate plans to protect the civil population from the risks of war the consumptive community seemed to have been overlooked. This was the more remarkable because many hundreds of young adults with tuberculosis would be able, if their treatment was continued, ultimately to render useful service to the country. Yet, while buses and ambulances transported children and expectant mothers, blind people and some cripples from the danger zones to places of safety, a third of the beds in sanatoria were emptied, and with a few exceptions these tuberculous people were sent home, there to decline and to pass on infection to their fellows. A month ago one of our peripatetic correspondents told of an evacuated patient whom he had visited at his home—a municipal tenement flat with three main rooms, all very small, housing a family of eight, including four young and therefore vulnerable children. The man had fibrocaseous phthisis, with active tubercle bacilli in the sputum. As was well said in a letter to the *Times*, an infective case of pulmonary tuberculosis may in time cause as much harm as a bomb.

The deputation to the Minister, of which an account was given on p. 1001 last week, besought him to draw up a detailed plan for the release of more beds for tuberculous cases, particularly for those in the infective stage, and the Minister was able to assure them that about two-thirds of the 28,000 beds provided for the treatment of tuberculosis in England and Wales had, in fact, remained available throughout the early weeks of the war. He admitted that the proportion varied in different parts of the country, and there is reason to believe that the sanatoriums serving industrial areas were the most drastically cleared, whereas it was precisely in those areas that the need of segregation was most urgent and the risk greatest of releasing the patients into their home surroundings. The Minister went on to tell the deputation that the closure of some of the smaller institutions was due to a misunderstanding which had been rectified, and he gave the assurance that as the hutted annexes to hospitals are completed more and more beds will be released for sanatorium treatment. To this extent, then, the chief cause for immediate anxiety may have been allayed, although it must take time to live down the unfortunate impression that this is no time to be bothering overmuch with the phthisical. But the deputation waxed bold and urged that the present is the time not for mere temporising but for a reconsideration of what the tuberculous service should be when the war comes to an end. The last war gave a great impetus to residential treatment and heralded an era of new hopefulness with the use of collapse therapy and various biochemical agents during the patient's period of segregation; there is, however, a widespread feeling that the remote results were not commensurate with the expenditure, or even with the effort put out, for the reason that aftercare and rehabilitation were neglected. Only in a few places was there any effective organisation for finding suitable employment under proper conditions for ex-sanatorium patients.

Good can only come out of the evil which has befallen us, as a correspondent points out, if it leads to the planning of a comprehensive scheme in which diagnosis, treatment and aftercare are placed on equal footing, when it will be seen that, whereas adequate treatment can be provided by a local authority, any scheme for rehabilitation to be effective must rest on a national basis. The three national organisations with the word tuberculosis in their titles have all done valuable work, limited as yet to particular spheres of action. Emergency has brought them together, and while each may do well to retain its individuality, they should arrange among themselves that nothing is neglected. The liaison committee should get to work at once.

DISSECTING ANEURYSM

AUTOPSIES performed on supposed cases of coronary occlusion occasionally reveal a dissecting aneurysm instead, and these aneurysms are certainly not as rare as is supposed. Spontaneous rupture of the aorta may be met with as often as once in 500 autopsies, and is much commoner than rupture of the heart. The underlying cause is degeneration of the media, but atheroma plays scarcely any part and syphilis plays none. The dissection usually starts in the ascending arch of the aorta. The blood may pass downwards to the pericardial sac or any distance along the distal part of the aorta to the iliac artery. On another page Dr. GARDNER, Dr. GALBRAITH and Dr. HARDWICK describe the case of a boy of 15 who died as the result of what is probably the biggest dissecting aneurysm on record. Dissection affected the whole aorta and its main branches, and the process extended into the lower limbs as far as the popliteal artery on the left side and the posterior tibial in the lower third of the leg on the right side. There was also dissection of the

pulmonary artery and its right main branch. Hitherto concomitant dissection of the pulmonary artery and of the aorta has not been described. Dissection of the pulmonary artery alone is very rare. The right coronary artery was dissected, and this is probably unique.

Men get dissecting aneurysms about twice as often as women, and they are rare under the age of 40. The patients are usually in good health, and a large majority have high blood-pressure. The onset may be precipitated by physical exertion, such as lifting a heavy weight or straining at stool. The pain is of excruciating intensity and the patient may describe it as rending or tearing. It may be in the precordium, in the neck, in the back of the chest, in the epigastrium, or in the lumbar region. If it starts in front it soon spreads to the back and vice versa, or it may extend from the chest to the abdomen and down to the legs. When a wide, progressive spread of pain can be distinguished this symptom is most striking. The pain is usually accompanied by collapse, pallor, profuse sweating, restlessness, and sometimes syncope. As a result the blood-pressure may fall. Vomiting is common and may be a dominant symptom. Cyanosis and venous engorgement of the face and neck may come about from pressure on the great veins in the thorax. Pressure on the œsophagus may cause dysphagia. Dullness and loss of breath sounds may be found at the left base, owing to effusion in the left pleural sac or to collapse of the left lower lobe. The pulse may be completely lost at one wrist, but more significant is the loss of the pulses in the legs. This happens so often that it is one of the most characteristic findings. After a time the pulses may return, as in the case reported by Dr. EAST on p. 1017. With the failure of the circulation the legs become cold and blue and the limbs flaccid; few patients live long enough to develop gangrene. The power of movement is lost and the tendon reflexes disappear. There is usually slight fever and leucocytosis up to 20,000 or more. In radiograms the aneurysm may appear as a great bowed shadow in the left side of the chest. Death is usually due to rupture of the aneurysm into the pericardial sac or into the left pleural cavity. Probably four-fifths of patients die in the first day or two, but some may survive.

Dr. EAST's case was that of a woman who first came under observation when aged 43 for high blood-pressure. The diagnosis of dissecting aneurysm was made during life and the patient survived for the remarkably long period of 5 years. Diagnosis is often difficult, especially in cases with little or no pain or with vomiting which masks the other symptoms. When the pain is epigastric some surgical emergency may be simulated, but there is usually little or no abdominal rigidity. Careful examination of the peripheral circulation will generally make the diagnosis clear. If the aneurysm does not rupture there is always a chance of healing, and in the hope that this may happen patients must be treated by absolute rest and full doses of morphia.

INDUSTRIAL HEALTH UNDER WAR CONDITIONS

THE report published twenty years ago by the Health of Munition Workers Committee makes disquieting reading today, for it revealed some of the mistakes made in the last war that may well be repeated in this. Set up in 1915 to investigate some of the factors that threatened the supply of munitions, the general validity of its findings remains unchallenged. Sir DUNCAN WILSON,[1] the chief inspector of factories, warns us that in war-time "there will be many new factors all tending to increase the chances of factory accidents. There is dilution of skilled labour by unskilled. . . . There are longer hours of work and intensified production; there is probably a greater amount of monotonous work." But more is at stake than a greater risk of accidents. War conditions produce a cumulative state of chronic industrial fatigue, with its invariable accompaniments—industrial inefficiency and increased morbidity as well as a higher accident-rate. The last war showed that the onset of industrial fatigue is manifested first by a gradual deterioration in the quantity and quality of the output of work per hour; then by a rise in the incidence of accidents and of short-period illnesses; and finally by a serious increase in more disabling illnesses.

In war there is an understandable tendency to take only a hand-to-mouth view of such things as the relation of production to health. It is so fatally easy to remember the need for greater immediate production and to forget the price that must be paid for it. Yet it is here that a long-term policy is most essential. If we are planning for a three-years war we ought now to set about the task of preventing fatigue before it appears. Some of the recommendations of the Health of Munition Workers Committee have already been incorporated in both legislation and factory practice. They found that long overtime and uncontrolled night-work are uneconomic and may be disastrous to health. They laid stress also on the importance of further research into speeds of work, working hours, night-work and other conditions out of which fatigue seemed to arise. Much of this research has been done but much has still to be undertaken, and it seems likely to be curtailed rather than stimulated by the war.

In 1917 the Industrial Fatigue (now Health) Research Board was constituted to carry on the work of the original committee, and the practical value of what it has since done needs no emphasis. It will be a catastrophe if its workers are now scattered to other tasks and its work comes to an end. The evil effects of uncontrolled overtime and unlimited night-work are not confined to munition factories, the man-power of the nation can only be used to the best advantage if the workpeople's health is watched over in *all* our industries. A tendency is already apparent to disregard the more important conclusions of the Munitions Committee and the Industrial Health Research Board and to revert to the bad old

1. *Bull. Indust. Safety*, September, 1939, p. 69.

ways. If this tendency is to be checked not only must the existing board press on its research but a central body with local subcommittees should also be established to watch for the early evidences of industrial fatigue and to see that the knowledge we have of its causation is put into practice throughout the country. The new committee should be representative of the universities, the Ministries of Health and Labour, the industrial research bodies, employers and employed, the friendly societies, and the medical profession, more particularly the general practitioners who are in close touch with the workpeople themselves. With such a committee working from an early stage in this war it should be possible to avoid much of the waste of labour that past experience shows will otherwise be inevitable.

THE CLINICIAN AND PSYCHO-ANALYSIS

DURING the last ten years a great deal of psycho-analytical literature has been published throughout the world, particularly in America. Much of it is of undoubted interest to practising analysts, but the great part is purely theoretical—a superstructure of theory built on theory. Compared with FREUD'S work, the welter of writing on his subject is characterised by a paucity of scientific material based on sound clinical observation. That analysis does not lend itself to scientific research is no excuse. Psycho-analysis was born of the scientific method in its most classical style; FREUD was nothing if not a sound clinician.

In many quarters there is much dissatisfaction with FREUD'S primary theories. Dr. KAREN HORNEY,[1] after fifteen years practice of the technique, has published her doubts. Starting with an exposition of the fundamentals of analysis, she proceeds to discuss libido theory, the Œdipus complex, the death instinct, the Ego and Id, the Super-ego and the other Freudian cornerstones. Her work shows a common-sense view, and sheds refreshing light in every chapter. For example, when discussing penis-envy the author says "it would require tremendous evidence to make it plausible that woman, physically built for specifically female functions, should be psychically determined by a wish for the attributes of the other sex." But, like most non-analytical psychiatrists, Dr. HORNEY has accepted the main truth of Freudian doctrine. She calls for the redistribution of emphasis on various ætiological factors. Great emphasis should be laid, in her opinion, on the importance of culture as a determining factor in mental mechanisms. FREUD, she alleges, failed to see this because he was preoccupied with instinctual trends which are only modified by individual environment. His patients were largely middle-class neurotics, a type characterised by "great potential hostility, by much more readiness and capacity for hate than for love, by emotional isolation, by a tendency to be egocentric, ready to withdraw, acquisitive, entangled in problems concerning possession and prestige." FREUD failed to realise that these trends were brought about by conditions of a specific social structure, and ascribed egocentricity to narcissism, hostility to a destruction instinct, and acquisitiveness to oral libido. While much of this seems valid argument, these vital problems cannot be solved by theoretical speculation, but only by a return to clinical observation and the scientific method. The time has come to abandon arm-chair philosophising. There is an immense work to be done in this field, both by fresh observation and by the method of comparison with standardised controls. The difficulties are also immense, but we do not believe they are insurmountable.

1. Horney, K., New Ways in Psycho-analysis. London: Kegan Paul, Trench, Trübner and Co. 1939. Pp. 313. 12s. 6d.

TO OUR READERS

TEN weeks ago difficulties of publication arising out of the international crisis made it necessary to print THE LANCET in the country and to rearrange its contents. The Proprietors then expressed to subscribers their regret at the omission of some of the paper's usual features. Since then the ground has been made good, and with willing help from some old and many new friends we have been able to keep our readers in touch with medicine in what may be epitomised as a brave new world. It has been a time of economic stress for various groups of subscribers, especially those who have exchanged private practice for whole-time service. The Proprietors are unwilling that this should stand in the way of their continuing to take the paper and they have agreed to offer THE LANCET for the duration of the war at a guinea a year to doctors in H.M. Forces or working full-time in the Emergency Medical Service. In the hope of bringing THE LANCET also within the reach of all who are now at the outset of a medical career the same offer is made to those who have been qualified not longer than a year. We would also remind medical students that until they qualify their year's subscription is only half a guinea.

The Lancet 100 Years Ago

Nov. 9, 1839, p. 253.

From a leading article on a projected "sanatorium" for paying patients.

What is an Hospital? A place where the sick are supplied with diet, medicines, nursing, the appliances of medical art and medical skill, at a *cheaper* rate than they could be supplied at home: it is a place, also, where all the diseases, sicknesses, sufferings, and infirmities of humanity, are concentrated; where the patients, dragged from home, and the cheering contiguity of health, are laid side by side in long cheerless wards, and breathe a fatal atmosphere from night to morning, and morning to night again: it is a gloomy garden, in which the withering, cankered, blasted, blighted plants are collected—shed their flowers, leaves, and decaying branches—mingle their exhalations—and drag each other to a kindred dust. . . . Wordsworth has described, with his accustomed simplicity, the feelings of the poor, who are driven to Hospitals, in "The Female Vagrant."

"Borne to an Hospital, I lay with brain
Drowsy and weak, and shattered memory;
I heard my neighbours, in their beds, complain
Of many things which never troubled me;
Of feet still bustling round with busy glee;
Of looks where common kindness had no part;
Of service done with careless cruelty,
Fretting the fever round the languid heart;
And groans, which, as they said, might make a dead man start."

ANNOTATIONS

THE GIRL'S RATION

UNTIL fairly lately it has been assumed that the food requirements of boys and girls over 14 are those of adults of the same sex. This assumption traverses common sense and crude observation. All boys between 14 and 18 and most girls between 13 and 17 eat, or appear to eat, more than their fathers. These were, moreover, the observations of Holt and Fales,[1] published as long ago as 1921. The recorded intakes of 100 children of educated parents living either in New York or in New England suggested that boys at 16 and girls at 14 to 15 might well be allowed 1000 calories more than their fathers and mothers respectively. The boys should get 4000 and the girls 3300 calories. Adolescence is the time of most rapid growth, of increased basal metabolic rate, of especial thyroid and pituitary activity, and of a nervous instability which often shows itself in increased muscular activity and irritability. Not only extra calories are needed but also extra first-class protein, extra calcium and phosphorus for bone growth, extra iron for red blood corpuscles, and extra vitamins.

The greater needs of adolescents are recognised by the health committee of the League of Nations,[2] who recommend a total daily protein intake of 2·5 g. per kg. body-weight between the ages of 12 and 15 and of 2 g. per kg. between 15 and 17, against 1 g. per kg. body-weight for adults. The committee's report states that in the growing period animal protein should form a large proportion of the total protein. In other words adolescents must not be treated as adults as regards either total or first-class protein. The same is true of calories. On the committee's scale a boy should get up to 1200 calories and a girl up to 600 calories more than an adult *male*.

This view has been partially accepted by the Ministry of Food. We hear that extra rations are to be given to adolescent boys, but girls are apparently to have no more than the ration for adult females. If that is true, and we hope that it is not, the Ministry of Food is flying in the teeth of the best opinion in dietetics. And if they argue that boys who have just left school are often doing hard manual labour, they should also remember that any weakling male can beget a baby, but it takes a healthy well-made mother to gestate, bear and suckle one.

AN UNPLEASANT NECESSITY

MORE than one lesson can be drawn from the recent publication of the white paper on conditions in German concentration camps before the war. It is probable that many people did not know the degree of systematised cruelty and degradation inflicted upon helpless men and women long after Nazi power had been firmly established; and inasmuch as one of our aims, perhaps our chief aim, in this war is the saving of Europe from a system of government that claims the right to use unlimited brutality in silencing every opposing voice, the story of the internment camps may legitimately be held out as an example of the evil principles against which we are fighting. Yet wars are not fought in the chilly atmosphere of reason, and this rational function of the white paper is feeble in comparison with its emotional appeal. Such an appeal is necessary, repugnant as it may be to make the frank admission, for among the degradations of ideals necessitated by war is the need to cultivate the warlike emotions. Hitler himself deliberately, and in time of peace, forced such cultivation upon his people, and now, willy-nilly, we must follow suit or suffer under a grievous handicap; and the recognition of this fact is not a cynical admission but a hard necessity if we are to guard against some of its more evil results. The strongest warlike emotions are fear and hatred, and to their four-year-long accumulation we can justly attribute the universally recognised mistakes of 1919, which have played their part in bringing about the events of 1939. The picture called up by reading the white paper stimulates, and it is right that it should stimulate, our determination to fight; but when the war progresses, and misfortunes and reverses stir us to greater effort (as they have done in the past), we may hope there will remain among our leaders, political and intellectual, an understanding that the warlike emotions are not only an unpleasant but a dangerous necessity.

1. Holt, L. E., and Fales, H. L., *Amer. J. Dis. Child.* 1921, **11**, 1.
2. The Problem of Nutrition, vol. II, Geneva, 1936.

PYELONEPHRITIS AND HYPERTENSION

WHILE Bright in his original paper described a disease of varied ætiology leading to renal failure, pathologists and clinicians in the last hundred years have tried to devise a satisfactory classification of renal disease. Weiss and Parker[1] point out that pyelonephritis is not considered as a form of Bright's disease, although it deserves to be, for it can lead to renal failure, vascular lesions and arterial hypertension. The arbitrary separation of kidney diseases into medical and surgical types has delayed progress, since the structural characteristics of pyelonephritis are essentially the same, regardless of whether the infection is hæmatogenous (descending), urogenous (ascending) or lymphatic in origin. Indeed pyelitis hardly ever exists without pyelonephritis. The clinical course of pyelonephritis is very variable. The renal infection often heals in a short time, but it may persist for years, during which activity may be continuous or recurrent. The functional capacity of the kidney thus may show considerable fluctuation during the course of the disease. Weiss and Parker found in their careful study of 100 selected cases that pyelonephritis is often associated with arterial hypertension, and they even estimate that the condition is responsible for at least 15–20 per cent. of cases of malignant hypertension. The severe obliterative vascular lesions found in pyelonephritis are similar to those in malignant nephrosclerosis; but in chronic pyelonephritis they are restricted mainly to the kidneys—in unilateral disease predominantly to the kidney affected—whereas in malignant nephrosclerosis they are generalised. The hypertension of pyelonephritis is often accompanied by nervous symptoms, including cerebral encephalopathy, neuroretinitis and high cerebrospinal pressure, and by toxæmia of pregnancy, and it commonly leads to left ventricular failure with attacks of cardiac asthma. But organic diseases of the cerebral and coronary vessels are rarely present, in contrast to states of chronic hypertension and malignant nephrosclerosis of other origin. Thus in the hypertension of pyelonephritis the symptoms are those of toxæmia (uræmia) rather than those that arise from vascular changes in brain and heart when the arterio- and arteriolo-sclerosis is widespread throughout the body. In pyelonephritis the sequence

1. Weiss, S., and Parker, F., Jun., *Medicine*, 1939, **18**, 221.

of events from the initial renal infection to the terminal stage of severe hypertension can be traced fairly clearly, and this is the one renal disease that can be treated effectively in the early stages.

IMMUNITY TO INSECT BITES

WE are all familiar with the experienced resident from the tropics whom mosquitoes will not touch, and with the lucky man who never suffers from the attacks of fleas. There is a small amount of evidence that certain blood-sucking insects do feed less readily on some individuals than on others; but in the vast majority of cases when people claim that they are not attacked by insects they really mean that they are insensitive to the bites and therefore fail to perceive them. It is not uncommon to observe a mosquito drinking its fill on one of these "immunes" at the very moment that he is proclaiming his immunity. That people vary in their response to bites is certain. The late Prof. A. E. Boycott showed that people not previously attacked by fleas of a given species often show at first no reaction at all; soon they become sensitised and suffer much irritation; finally they may become desensitised and hence "immune." Old residents in San Francisco, a region that abounds in fleas, no longer suffer from their bites, whereas newcomers suffer intensely. Recently, some American investigators[1] have shown that extracts prepared from the local fleas of this district produce an intense reaction when injected intradermally into the sensitive people, but almost no reaction in the immunes. They have gone further, and by repeated doses of the antigen have reduced the response in the former group. Some of the patients who had acquired immunity in this way "volunteered the information that they could now go with impunity to the movies." All these results bear out what was already known about sensitivity to insect bites. But when the authors state that such induced immunity against bites would be an extremely valuable adjunct in the control of insect-borne diseases they are on less certain ground. It might indeed be argued that to be unaware of the attacks of insects will positively increase the menace of the diseases which they carry.

TWINNING

OUR United States correspondent draws attention to an interesting difference between monozygotic and dizygotic twins. Whereas the relative frequency of monozygotic twin births remains fairly steady, that of dizygotic twinning steadily increases with the order of birth. Dizygotic twinning in sixth and later births taken together is about three times as frequent as in first births. Dahlberg and others have already drawn attention to this fact, and to the other facts noted by Yerushalmy and Sheerar. It is perhaps a pity that these authors have made use of an empirical method of calculating the relative frequency of the two types of twins when a satisfactory a-priori method, Weinberg's differential method, is available. From their provisional notice, it would seem that the authors are not well acquainted with the large European literature on the subject of twinning.

The finding strongly suggests that there is an important environmental factor in the ætiology of dizygotic twinning which is not also involved in monozygotic twinning. Yet two puzzles remain. On the one hand, the most convincing evidence in favour of a hereditary determination of twinning has been found in investigations of the families of dizygotic twins. On the other hand, Dahlberg, Curtius, von Verschuer, and others found themselves compelled to take the view that if there is a hereditary factor for twinning, it involves a tendency to the production of both types of twins. Some years ago it was reported from Japan that the incidence of monozygotic twining in that country was about the same as in the Occident, but that the frequency of dizygotic twinning was much lower. Difficult and important problems are facing us here, and the work of Yerushalmy and Sheerar represents an additional fragment of evidence confirmatory of the evidence already accumulated. We shall have to await a solution until we have really large numbers capable of statistical treatment, such as can only be provided by the adequately detailed census figures of a large population and by further family investigations on a corresponding scale. Work on twinning provides an excellent illustration of the difficulties of studying heredity in human material. Unlike investigations into the heredity of disease and morbid phenomena, however, it is possible that our work in this field might be to some extent lightened by breeding experiments with animals.

SWIMMING EAR

IT is usual at this time of the year for otologists to take stock of the seasonal crop of "swimming ears." The poor weather of the early part of this summer did not encourage bathers, and the warm sunshine of last month was dissipated in the political storms. The yield has consequently been small. The reasons for the association of bathing and aural infection are, in general, not well understood either by the practitioner or the layman, and otologists have not always laid sufficient stress on them. Taylor[1] has given a brief account of the more important factors, emphasising man's lack of biological adaptation for an aquatic existence. The key to the problem lies in the mucous membrane of the nose and nasopharnyx. This is of the ciliated columnar type adapted to cleansing inspired air of both inorganic and organic impurities. Mucus is secreted by special cells in the epithelial layer and forms the medium in which the cilia work. The mucus contains anti-bacterial substances and maintains a relatively constant hydrogen-ion concentration for optimum ciliary activity.[2] In aquatic animals there is usually a mechanism for closing the anterior nares or some other device for preventing water coming into contact with the respiratory mucous membrane. In man no such developmental characteristics exist. Water is thus able to enter the nose and wash away the protective mucus layer, damaging the lining membrane and leaving it devitalised and in no condition to resist infection. To avoid this, swimmers should be taught to exhale through the nose while the head is submerged and to inhale through the mouth while the head is above water. The positive pressure thus maintained in the nasal cavities will prevent the entry of water. All good swimming coaches teach this, but the trick is not easily learned and bad habits soon creep in. Modern swimming strokes especially demand a good breathing technique. For the same reason, jumping into water feet first should be discouraged.

The infecting organisms are either pathogenic bacteria normally present in the upper respiratory tract or foreign bacteria which gain a foothold when the local defences are weakened. The rapid spread into the middle ear is possibly due to damage of large areas of nasal mucous membrane at a time, and this is

1. Cherney, L. S., Wheeler, C. M., and Reed, A. C., *Amer. J. trop. Med.* 1939, **19**, 327.

1. Taylor, H. M., *J. Amer. med. Ass.* Sept. 2, 1939, p. 891.
2. Hilding, A. L., *Arch. Otolaryng.* 1932, **15**, 92.

perhaps also the reason why the infection is so often severe. In addition, man is not equipped for prolonged immersion in water, having no fur or fatty covering to prevent lowering of the body temperature, and such cooling reduces the resistance to infection. Care should therefore be taken not to stay too long in cold water nor to remain inactive whilst out of the water unless exposed to the warm rays of the sun.

Otitis externa or furunculosis may result from maceration of the skin of the external meatus by prolonged contact with water. Aquatic animals are again specially adapted to prevent this happening, for they can close the external orifice of the meatus. In man, as a substitute, ear plugs of rubber or oiled wool or cotton may be used. Thus quite simple prophylactic measures should result in a useful diminution in the incidence of the "swimming ear" once it is recognised how badly man is adapted to an aquatic environment.

LUNG ABSCESS AND M. & B. 693

WHEN the fever of lobar pneumonia has been aborted or shortened by serum or M. & B. 693, resolution usually goes on normally in the consolidated tissue, as would be expected when once exudate has filled the alveolar spaces. But certain workers, notably Anderson and his colleagues,[1] have observed an unduly high incidence of delayed resolution among patients treated with M. & B. 693. One possible cause is lung abscess, which, ordinarily a rare complication of lobar pneumonia, has seemed more common since the new chemotherapy was introduced. In a fair proportion of fatal cases of lobar pneumonia the lungs show considerable necrosis of tissue, which had the patient lived would have become an abscess, and it seems likely that M. & B. 693, by helping the patient to overcome and the lung to circumscribe the infection, will present us with a number of lung abscesses in live patients instead of the "bags of pus" we have been accustomed to see in dead ones. Serotherapy has had similar effects—for example, Harrington[2] noted 3 instances of lung abscess among 98 cases of lobar pneumonia treated with type I or II pneumococcus antiserum.

M. & B. 693 is known to be more or less ineffective in the presence of pus, probably because of the antagonistic effect of proteolytic products on the drug, so that it cannot be expected to influence the course of a lung abscess once necrosis of tissue has taken place. The need is for careful clinical observation of the patient during the stage of resolution—aided by radiography where there is delay, for the symptoms and signs of lung abscess may be equivocal—and the avoidance of over-hasty convalescence when consolidation persists.

WHY IS THE PALE CHILD PALE?

PERSISTENT pallor in children may arise from a variety of causes, some of which are quite consistent with health. It may be a family characteristic—a mere unusual arrangement of the superficial capillaries—or may be part of a general poor vasomotor tone, or due to bad housing conditions with insufficient sunlight. But the layman's belief that all pale children are anæmic dies hard, and many spend their childhood alternating between Parrish's Food and syrup of figs in consequence. In the school medical service the confusion is particularly troublesome, for the inspecting officer cannot check the layman's diagnosis without a hæmoglobin estimation, for which there is little time. Lately, Dr. Henderson and Dr. Gilchrist[1] found that of 134 children sent to school clinics by parents, teachers and school medical inspectors because of alleged anæmia only 7 had a hæmoglobin level of less than 80 per cent. (Sahli) and only 29 had less than 85 per cent., which is usually accepted as normal on this scale. Dr. Henderson also investigated 528 children attending the Leyton minor-ailment clinics, all selected because of the pallor of their skin and mucous membranes, and found that only 124 (23·5 per cent.) had a hæmoglobin of less than 85 per cent. Gilchrist suggests, however, that 90 per cent. Sahli should be taken as the normal, for she observed that the hæmoglobin of children with less than this figure could be raised by full doses of iron. On this basis some 40 per cent. of these children were genuinely anæmic. The part played by undernutrition in the anæmic ones seems doubtful. Henderson says that the highest incidence of anæmia in his selected group was among the undernourished, though of these only 29 per cent. had a hæmoglobin of less than 85 per cent. Gilchrist, on the other hand, remarks "it was surprising at times to find that a badly undernourished child, well below average height and weight, flabby and with poor muscle tone, had a hæmoglobin index of even 100 per cent." Perhaps in such children the vascular musculature is as flabby as the skeletal. Whatever the explanation of the anomalous cases, their frequency does suggest that an opportunity should be found for at least one hæmoglobin estimation during the schooldays of every pale child, if only to save many from years of unnecessary coddling and useless medication.

MIDWIVES AND THEIR BOARD

LIKE the General Medical Council the Central Midwives Board exists for the protection of the public rather than the furtherance of professional interest. The annual report of the C.M.B. which is before us illustrates how little the parturient woman needs to be protected from Sarah Gamp's heirs and assigns. During the year ended March 31, 1939, only eleven midwives were charged with malpractice, negligence or misconduct, and of these it was seen fit to inhibit only one woman from her profession. Three were cautioned, one severely censured, in four cases sentence was postponed, and in the other two no action was taken. And on that date there were 62,905 women on the roll. Of course a large proportion of them are not in practice, but the roll is becoming more real for 3273 live names were added to it and 6822 removed, as a registered letter failed to produce evidence of professional activity. The number of midwives practising during 1938 was 16,761, or a drop of 733 on the previous year. Only 74 of these, or 0·4 per cent., were untrained. The inconvenience of an inflated roll has now come to such a pass that the board has decided to publish annually another list, being a roll of practising midwives, the first issue of which will relate to the years 1937–38. It was at one time doubtful what effect the new training rules would have on entries and it is good to note that the number of pupil-midwives passing the training schools in 1937 was the highest on record. There are signs indeed that a normal state may be reached earlier than was at one time expected. On July 6 there were 2262 names on the register of pupils. At the same time the post-certificate instruction of the practising midwife is taking shape; she is to attend a course once in seven years, and the board has approved for the purpose a small number of institu-

1. Anderson, T., et al. *Lancet*, Oct. 7, 1939, p. 776.
2. Harrington, A. W., *Trans. R. med.-chir. Soc. Glasg.* 1933, **27**, 148.

1. Henderson, P., and Gilchrist, M., *Med. Off.* Oct. 21, 1939, p. 163.

tions, serving large and populous areas. Each of these will hold ten courses a year, admitting about ten midwives to each course. The report records the increasing use of analgesics by midwives; ten institutions were approved for giving instructions in the administration of gas-and-air analgesia, the total number now being 56. Six kinds of apparatus have been approved. All the safeguards recommended by the Royal College of Obstetricians and Gynæcologists have been incorporated in the rules, which still require the presence of a second person in the room while the analgesic is being given, in addition to the midwife in charge of the case. The report also tells of a register of women willing in a national emergency to do midwifery either near home or at a distance. The second part of this register will make a central pool on which a needy local authority can call. The report, although still difficult for the uninitiated to follow, is far more detailed and readable than ever before, and is now almost a human document. This may perhaps be correlated with the appointment of an assistant secretary who took up his duties in January last.

THE GALL-STONE DISEASE

AUTOPSY evidence gives ground for thinking that the incidence of gall-stones may vary according to race, diet and occupation as it certainly varies according to age and sex. But there are few if any published series in which the material is adequately subdivided, and valid estimates of incidence in the general population can hardly be based on series where the presence of stones might be correlated in a number of ways with the conditions that brought the body to the post-mortem room. On the clinical side, it is believed that gall-stones like renal stones can reflexly derange digestion. But the majority of carriers seem to suffer little inconvenience from their stones, and on the analogy of gastritis or colitis it can be argued that cholecystitis is the result of digestive dysfunction and not the cause of it.

When it comes to assessing the results of treatment, our statistical ignorance is profound. Gall-bladder disease is diagnosed or suspected in cases of colic and of active cholecystitis. This material is diluted with a variable percentage of cases of indigestion associated with stone or with a gall-bladder which fails to fill with radio-opaque dye. The degree of dilution depends among other things on the attitude of the general practitioner and outpatient consultant, the nature of the available X-ray plant and the keenness of the radiologist. Gall-stone patients are a selected group from the first and further selection occurs with subdivision into cases for radical and conservative treatment. Age, sex, obesity, concomitant disease, severity of symptoms, and willingness to submit to operation all influence the decision, and even in a single hospital the policy adopted can rarely be uniform. At the cost of an unpleasant operation of which the mortality rises rapidly with age, surgery gives a higher percentage of lastingly symptom-free patients. But as Ehnmark[1] of Uppsala points out, in one of the best statistical studies that have yet appeared, operation or no operation, more than half the patients remain free from serious symptoms, and a follow-up of at least five years is needed before the relapse-rate can be determined and the two groups compared. During this time many patients will die from unrelated disease, especially in the older and less healthy group treated conservatively. The problem is left of deciding whether the policy adopted has been too radical or too conservative. Ehnmark's survey seemed to be the only one where over 90 per cent. of a large number of cases of gall-stones consistently treated has been followed up for over five years and analysed by modern statistical methods. The attitude he takes up is a strictly conservative one. The best treatment, however, would be prevention and there is an obvious need for more detailed statistics on the incidence of gall-stones, with and without symptoms.

1. Ehnmark, E., *Act. chir. scand.* 1939, **82**, suppl. 57.

INTESTINAL OBSTRUCTION IN BABIES

BOWEL obstruction in the newborn has always been a source of interest to clinician, pathologist and embryologist alike; to the surgeon it has the added interest that his early recognition and prompt treatment of the condition may be life-saving. It is one of the rarer varieties of pædiatrics, however, and Dr. E. M. Miller[1] of Chicago has been fortunate in having 14 cases under his care during the past 13 years. He divides the causes of obstruction, which is nearly always due to an error in development, into two main groups—intrinsic and extrinsic. In the former the embryological error is an interruption in continuity of the bowel—e.g., a septum—and in the latter it is a band of peritoneum, or perhaps an anomaly of rotation. Of Miller"s 14 cases, 6 were ileal or jejunal, and all these died after operation; 8 were duodenal, and 4 of these survived. The high mortality in low obstruction is to be expected, for the infant is always desperately ill, and the technical difficulties of bowel anastomosis are great. Miller can find only 3 records of babies with low obstruction who survived operation. In each a lateral short circuit was made, combined in one case with ileostomy. Ileostomy alone is useless. The better results in duodenal obstruction depend on the greater ease of diagnosis, the more aseptic field of operation, and the fewer technical difficulties to be overcome. In 16 successful cases that have been published the operation most often performed was a posterior or anterior gastroenterostomy. Duodeno-jejunostomy was done in 3, and in 1 case a fibrous diaphragm 2 mm. thick was removed from inside the duodenum by diathermy. In Miller's 4 cases of duodenal obstruction which survived operation, the cause in 3 was intrinsic, and a short circuiting operation was performed. In 1 the cause was a volvulus, and it was necessary only to untwist the pedicle. Miller makes a strong plea for early diagnosis, and here he sets much value on the association of bilious vomiting with visible peristalsis. In ileal cases the vomiting soon becomes paramount and dehydration is rapid. In some cases X rays may be helpful, preceded by a barium meal if the obstruction appears to be high, or a barium enema if it is thought to be low.

The 25th annual report of the Board of Control which appears this week surveys the last complete year before the international situation began to make things difficult. Actually at the end of 1938 the position in the mental hospitals was better than the board had anticipated in its previous report. The increase of patients during the year was 1644 against an average of 1924 for the five-year period. At the same time the accommodation was increased by 2259 beds, thus reducing the aggregate overcrowding below the 3000 figure. The improvement was even greater than appears, for the death-rate fell from 7 to 6·5 per cent. and an increase of 545 in direct admissions was more than counterbalanced by an increase of 1628 in the discharges and departures. Encouraging also was an increase during the year of voluntary admissions to the number of 1237.

1. *Ann. Surg.* October, 1939, p. 587.

THE NEW ENDOCRINOLOGY

A series of articles by Prof. E. C. DODDS, F.R.C.P., *director of the Courtauld institute of biochemistry at the Middlesex Hospital, based on lectures delivered at the British Postgraduate Medical School*

VI—DIAGNOSTIC VALUE OF URINARY HORMONES

BOTH œstrogenic and androgenic hormones can be detected in the urine, but it has not been found possible to obtain progesterone, except in minute quantities, from this source. Pregnanediol, on the other hand, can be easily obtained, and it is probably the excreted form of progesterone, though it is inactive biologically. The excreted form of a hormone is always less active than the hormone itself.

The amount of sex hormones excreted in the urine bears no definite relation to the amount of hormones being secreted. The quantity actually produced in the body or supplied by food is unknown, as is the storage of hormones in the body. By the ordinary methods of extraction only 3–12 per cent. of œstrogenic hormone administered can be recovered; the recovery of gonadotrophic hormones is believed to be less than 20 per cent. of the amount injected, and the corresponding figure for male hormone is about 10 per cent. In the case of progesterone, which, as we have said above, is thought to be excreted as pregnanediol, Venning and Browne claim that their method will recover between 12 and 46 per cent. of progesterone injected.

Thus at the present time it is only where excessive quantities of hormones are excreted that assays of the urine are of value. The chief diagnostic use of urinary hormones today is in cases of adrenal cortical tumours. Both males and females with adrenal cortical tumours are found to excrete excessive quantities of androgens. The normal excretion varies from 5 to 15 mg. "sterone," or 16 to 80 international units, per day, but female patients with adrenal tumours may excrete as much as 100 mg. "sterone," or 250 to 300 international units, daily. Such tumours can therefore be easily and quickly diagnosed by androgen assays of the urine.

By such assays it is also possible to distinguish between cases of adrenal tumour and Cushing's syndrome, since in the latter the androgen secretion is either normal or slightly lower than normal.

R. S. Ferguson claimed that it is possible to divide testicular tumours into five groups by a quantitative assay of the amount of gonadotrophic hormones in the urine; but later workers have insisted on the importance of differentiating the type of gonadotrophic hormone as well as the quantity. C. Hamburger divides testicular tumours into four groups on the basis of the type and quantity of gonadotrophic hormones excreted—namely, seminoma, pseudo-seminoma, mixed epithelioma and polycystic teratoid, as shown in the accompanying table. Since the prognosis and treatment of these various types differ widely, the importance of such hormone assays will be evident.

No. of cases	Diagnosis	Negative	Traces	Hypophyseal hormone	Chorionic hormone	Both hormones
42	Seminoma	13	4	25	0	0
2	Pseudo-seminoma	0	0	0	2	0
21	Mixed epithelioma	3	1	0	14	3
10	Polycystic teratoid	4	2	4	0	0

SPECIAL ARTICLES

MEDICINE AND THE LAW

Damages for Nervous Shock Refused

THE *Law Quarterly Review* has recently drawn attention to an interesting Australian decision which checks the trend of recent cases awarding damages for nervous shock where there is no physical impact. In Chester *v.* Municipality of Waverley the facts were that the town council had dug a trench in a road; rain-water collected in some places to a depth of 7 ft.; it was known that children played on the edge of the trench which the council omitted to fence; a boy fell in and was drowned. His mother had missed him and made search for him; she was present when his dead body was taken from the trench; the shock caused her physical injury, and she sued the council for damages which, she alleged, were due to the council's negligence. Her claim failed successively before the trial judge, the full court of the Supreme Court of New South Wales, and (though one judge dissented) the High Court of Australia. The account of the case should be studied in the October number of the *Law Quarterly Review*; the learned editor's comments convey the impression that the decision is out of touch with the judgments of our own courts and that he prefers the line taken by our own judges. An appeal to the House of Lords is pending in Owens *v.* Liverpool Corporation, the case where damages were given to the near relatives of a dead man because the hearse containing his body was jolted by a negligently driven tram-car in the sight of those who were following in the funeral procession. The House of Lords will thus have a chance to lay down the general principles on which damages for nervous shock are or are not proper.

In the Australian case the trial court found that the defendant council was negligent in causing the child's death. The claim failed for want of proof that there had been any negligence towards the mother. Broadly, the judges decided that the council could not reasonably have been expected to anticipate that the mother would suffer shock at the sight of her child's dead body. It was curiously suggested that death may give serious shock but that the mere sight of a body already dead does not commonly produce more than a temporary consequence upon bystanders or even close relatives who see it. The mother, it was said, was not using the road, nor did she see the child drown. "The law must fix a point where its remedies stop short of complete reparation for the world at large which might appear just to a logician who neglected all the social consequences which ought to be weighed on the other side." Against this dictum the learned editor sets the view of Lord Justice MacKinnon in the Liverpool hearse case—"Fear that unfounded claims may be put forward and may result

in erroneous conclusions of fact ought not to influence us to impose legal limitations as to the nature of the facts that it is permissible to prove."

The English decision in Hambrook *v.* Stokes (1925) may be remembered. A mother saw a runaway lorry descending a hill to the imminent danger of herself and her child. In the recent Australian case the mother had no anxiety for her own safety and the court felt able to distinguish the judgments in the Hambrook case. In the Hambrook case, however, the Court of Appeal by a majority disclaimed the idea of making any distinction between shock due to apprehended injury to oneself and horror at the sight of injury to somebody else. Lord Justice (now Lord) Atkin said that the duty of the negligent defendants extended to bystanders and third parties; though it must be admitted that Scottish judges declined in 1927 (Currie *v.* Wardrop) to follow England in applying this extension. The dissenting judge in the High Court of Australia—whose view, in the opinion of the *Law Quarterly Review*, may ultimately prevail—did not feel deterred by any such distinction between peril to oneself and peril to others. He was impressed by the agony which the mother must have suffered while searching for her missing child (whose absence was due to the council's negligence); this would have been as severe a strain upon her nerves as a view of the accident itself. One may indeed ask why the council should be in a stronger position when its negligence causes the mother a desperate effort to find her child than when she merely stumbles across the body after the accident has happened? Ought it to make any difference that the shock to the mother is caused before or after the accident to the child?

SULPHONAMIDES IN WOUND INFECTIONS

A MEMORANDUM supplementary to the one published on p. 996 of our issue of Nov. 4 has now been distributed by the War Office to members of the R.A.M.C. In the first memorandum it was emphasised that no evidence is yet available for assessing the reaction to these drugs of persons suffering from shock. It is probable that they may stand the drugs badly, and the supplementary memorandum therefore advises that the first batch of cases to receive sulphonamide derivatives for prophylaxis or treatment should be carefully observed. If patients are severely shocked, treatment with these drugs will be better suspended until the circulation, temperature and urinary excretion have been re-established to reasonable levels. Should there be evidence that the drugs, in the doses suggested, are not well tolerated, administration should be suspended or the dose reduced. If experience shows that the dosage given in the original memorandum is too high, it is now suggested that the following modified course should be tried.

Sulphanilamide and M. & B. 693.—For *prophylaxis*, total of 3 g. per diem to extend over a period of 4 days, administered as one tablet every 4 hours. For *treatment*, first 24 hours, total dosage 4–6 g. according to severity, but, in extreme cases, such as septicæmias, up to 9 g.; doses should be given 4-hourly, so that half the total dose is given during the first two administrations, and the balance equally divided between the remaining four administrations. Second 24 hours, total dosage and spacing similar to the first day. Subsequent days, dosage to be guided by the condition of the patient, reducing the administration of the drug to 2–3 g. per diem. Total period of administration not to exceed 9 days.

The supplementary memorandum urges that when patients who have received prophylactic or curative treatment with these drugs are transferred from one medical unit to another clear indications shall be given in the transfer documents as to treatment and, in particular, which drug has been employed, as well as the total dosage given. If this is neglected, there will be a grave danger of overdosage with the consequent risk of agranulocytosis. Individuals who have been found to be unduly susceptible to sulphonamide derivatives should have this fact clearly stated on their documents so that the drugs may not again be administered later. Susceptible persons inevitably suffer a recurrence of complications when a fresh course of the drug is instituted.

SCOTLAND

(FROM OUR OWN CORRESPONDENT)

TREATMENT OF RHEUMATISM

IN a lecture on the chronic rheumatic diseases to the local division of the Medical Women's Federation in Edinburgh Prof. L. S. P. Davidson reviewed the research activities of the Empire Rheumatism Council and also the council's campaign for the introduction of diagnostic and treatment centres. If the public are to press for the necessary legislation, he said, they must first be instructed in the problem, and such instruction is best given by the general practitioner. He hoped that practitioners realise the enormous economic loss to the country from rheumatic diseases, a loss which can be largely reduced by adequate facilities for treatment. A sixth of the total invalidity of our insured population is due to rheumatic diseases, and in England and Wales the annual cost to industry amounts to over £16,000,000. Professor Davidson gave particulars of the survey which he and his assistants carried out on 100,000 insured and non-insured people in the north-east of Scotland. The practitioners who coöperated told him that at least 10 per cent. of all their work was connected with this group of diseases. It is estimated that throughout Scotland over 300,000 persons consult their doctors each year on account of rheumatic disease, and that probably 100,000 suffer from rheumatism in one or other of its chronic incapacitating forms. In the ten large voluntary hospitals in Scotland, in which there are 1391 medical beds with 22,414 medical admissions a year, only 1574 admissions are for rheumatic disease, and this figure includes nearly 600 case of acute rheumatic fever. About another 5000 cases are treated as outpatients in the physiotherapeutic departments. This means that of all the cases only 1 in 100 receives inpatient treatment and 1 in 20 outpatient treatment at the hospital centres. It appears, therefore, that insufficient facilities are available.

Rheumatoid arthritis, Professor Davidson continued, must be regarded as a general systemic disease requiring general as well as local treatment. This involves long institutional treatment with rest under suitable conditions. Faulty body mechanics require correction under the guidance of specially trained medical orthopædists for the prevention and reduction of deformity. In addition, adequate modern physiotherapy by means of radiation, hydrotherapy, massage and so on is required. Attention to the psychological factor is necessary in the adjustment of social relations at home and at work, while occupational factors are of paramount importance in the production and maintenance of the disease. An adequate follow-up service is needed in order to catch recurrences early and assist patients during the necessarily long convalescent period. Such a widespread service is

beyond the capacity of the voluntary hospitals and must be provided by national and local authorities. After the war rheumatic centres should be established on a regional basis; the centres should be based on a University city, because research and educational facilities are available there. Specialist services such as ear, nose and throat departments, bacteriologists, orthopædists and physiotherapists must be provided. It is not yet clear whether the most desirable arrangement would be a close coöperation between the local authorities as financial sources and the voluntary hospitals as sources of medical services, or whether such hospitals should be built in the country on the bungalow system. If the latter course is followed, diagnostic clinics must be established in industrial centres so that outpatients may be seen and ambulant cases treated without imposing transport difficulties on the patients. Large specially trained social and home-service departments must be organised, together with regional sub-centres in outlying districts which could be visited by consultants. The chronic rheumatic centres should be under the direction of one or more full-time medical officers of health, supported by part-time assistants.

DEATH OF A SHOWMAN

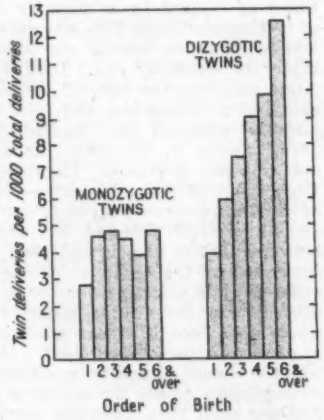
To those who saw him in his heyday the death of Walford Bodie will bring regret. For, like all great showmen, he knew something of human psychology, and he played easily on our child-like credulity and love of spectacle. He used the title of doctor (a title which he legally acquired in dental surgery from an American university) and thus helped to add something of the mystery of the old alchemists to his art. All the devices of the medical quack were well known to him, but he used them to amuse and not to dupe his fellow men. He was, too, a master of advertisement. He would time his arrival in a country town just as the douce folk were leaving church, and many of them still remember his top-hat, gold monocle and waxed mustachios as his open landau with its magnificent greys cantered up the main street. To the country people he was a sort of benign Rasputin, and there are many tales of his wonderful cures by bloodless surgery. The most striking feature of his performance to older generations was his use of high voltage electric currents, but his real talent was as a ventriloquist. His powers of hypnotism were perhaps open to doubt, but he could deal trenchantly with the sceptic. He would quickly recognise and introduce to his audience the gentleman who was determined to show him up by saying that there were, of course, two classes of people nobody could hypnotise—the congenital idiot and the chronic alcoholic; thereafter he had little difficulty with his subjects. But Walford Bodie had lived into an age of film-stars and wireless, and it is significant that at Mitcham Fair some years ago the fat lady was in the next tent.

UNITED STATES OF AMERICA

(FROM OUR OWN CORRESPONDENT)

A STUDY IN TWINS

J. Yerushalmy and S. E. Sheerar have completed a statistical study of twin births, working with 166,000 birth and stillbirth certificates, which include 3660 certificates belonging to 1830 pairs of twins. The study is sponsored jointly by the National Institute of Health and the New York State Department of Health, the certificates all being derived from upstate New York. An original method was employed for differentiating the numbers of monozygotic and dizygotic twins. Since birth certificates contain no record of the appearance of twins, nor of the placentæ to which they are attached, the authors were obliged to resort to a mathematical method. They start from the observation that the ratio of two males, one male and one female, and two females is approximately 1:1:1. From this they feel justified in assuming that approximately one-half of all the same sexed twins are monozygotic. The assumption is tested and found to be satisfactory. Using it they conclude that in upstate New York the frequency of monozygotic twins was 4·3 per 1000 total deliveries and that of dizygotic twins 6·7. The figure shows at a glance the most interesting finding in this study. The frequency of dizygotic twins increases very rapidly with the advancing order of birth, whereas the frequency of monozygotic twins is practically constant for all orders of birth. The frequency of dizygotic twins also increases with advancing age of the mother, and evidence is presented to prove that this increase occurs independently of the relationship to order of birth. The complete study with tables and charts will be published in the December issue of *Human Biology*. I am indebted to the editor for permission to offer you the figure for advance publication.



Frequency of monozygotic and dizygotic twin births per 1000 deliveries, in order of birth (New York State, exclusive of New York City, 1936 and 1937).

BUCHAREST

(FROM OUR OWN CORRESPONDENT)

LICENSING OF ANALYTICAL LABORATORIES

THE Ministry of Public Health has published an enactment forbidding private persons or private physicians conducting analytical laboratories unless they acquire a State licence. Professors and assistants of the three universities of Rumania obtain a licence upon a simple application without further formality, while specialised physicians, chemists and pharmacists are allowed to conduct such analytical laboratories if they fulfil the demands prescribed in the new enactment. With the application, the candidate must send a document proving that he has the necessary qualification, likewise a certificate issued by the institute where he studied, together with 3000 lei, the examination fee. The applications are scrutinised by the ministry, in the bosom of which a special committee is acting, which considers only the applications of those who have worked in an inland or foreign university laboratory for at least two years without interruption. In specially deserving cases the committee may pass candidates without examination. In ordinary cases

the candidate can sit for examination immediately. In case of failure the applicant may again present himself after a year, but has to prove that during this year he incessantly functioned in a privileged laboratory. For those who obtain the licence to open a private analytical laboratory, the enactment prescribes what apparatus, equipment and installation has to be possessed. The enactment prescribes heavy penalties for those who make analyses without licence.

NOTIFICATION OF MALARIA

Malaria has now been added to those diseases which have to be notified to the health magistrates. In doubtful cases blood specimens can be submitted to the National Public Health Institute in Bucharest, where analyses are made free of charge and the results sent out the following day by telegraph.

PHYSICIANS IN THE RUMANIAN CHAMBER OF DEPUTIES

Our Chamber is composed on a basis of guilds. Altogether 11 physicians gained entrance into the halls of the Parliament, to wit 7 into the Chamber and 4 into the Senate. Not a single physician has been elected in the capacity of minister, landowner, vineyard owner, manufacturer, workman or journalist, though the number in these occupations is not negligible. Although a doctor, M. Vaida Voevod, former prime minister, and now speaker of the Chamber, never practised medicine. The only medical member of the Senate *de jure* is Professor Anghelescu, late minister of Public Instruction. Two of the appointed senators are doctors, Dr. Hatieganu, professor of clinical medicine at the university of Cluj, and Dr. Lucian Skupiewski, a practitioner in Bucharest. The Chamber allotted 86 places for deputies from the intellectual classes. To these about 60 lawyers were elected as against only 7 physicians. In several provinces, where 6 places were allotted to intellectuals, physicians have not been candidated at all, and almost all places were filled with lawyers.

REQUIEM FOR MILITARY SURGEONS KILLED IN THE LAST WAR

At the Regina Elisabetha central military hospital a requiem in memory of health personnel killed in the 1916–18 war was held with a military parade on the anniversary of the day when Rumania entered the war. Jancovescu, surgeon-general and commander of the hospital, said that 400 health officers, most of whom were doctors, lost their lives. This was a 14 per cent. mortality rate, almost equal to that of the infantry officer corps. In 1918, General Averescu, then prime minister, in a report to the late King Ferdinand, spoke of the heroism and self-sacrifice of the doctors and asked the King to allow military doctors to wear the same service insignia on duty and on festive occasions as are worn by combatant officers. The King yielded to his request and since then military surgeons are equal in rank with the combatant officers, and their titles—chief physician, regiment's surgeon, and staff surgeon—have been changed to lieutenant-surgeon, captain-surgeon, and so on.

GRAINS AND SCRUPLES

Under this heading appear week by week the unfettered thoughts of doctors in various occupations. Each contributor is responsible for the section for a month; his name can be seen later in the half-yearly index

FROM RECHAUFFEUR

II

WHEN one starts in general practice, I suppose one's greatest anxiety is not to miss the diagnosis of a definite clinical condition. Only after some years' experience does it get borne in on one that it may be a worse mistake to diagnose something which is not there than to miss it when it is. The consequences, for instance, of failing to detect left heart insufficiency may be serious, but they can hardly be worse than those of diagnosing "heart-trouble" in a case of functional invalidism. For not only is an organically fit person reduced to an unjustifiable life of stagnation, but the unfortunate relations and friends may find themselves satellites of an invalid chair for an indefinite number of years. If life is to be circumscribed, let it not be on false premises.

I remember well a woman of 40 who had spent most of her married life on a sofa, round which her family circulated on tip-toe, while her husband cut up her food for her. One day she was unexpectedly told by a young and inexperienced physician that he could find nothing the matter with her and that she could play golf. To everyone's glad surprise she believed him, bought a few clubs and has played the game ever since. Her family has been released from an interminable and intolerable atmosphere of invalidism, but yet I fear she is not as pleased as they are, for she told me fifteen years afterwards in an emotional exacerbation that she had been much happier when she was an invalid.

One of the most pathetic things about elderly functional patients is a longing to have something definite found the matter. A patient once said to me, "If only you could find that I had locomotor ataxy, I should be much more content." Dr. Relling in Ibsen's "Wild Duck" had his own methods for such unfortunates, but in these days psychology forces us to look deeper. If the average healthy man is deficient in self-knowledge, how great must be the darkness blanketing the mind of the neurotic!

* * *

The neurotic may be described as a person whose symptoms make him unfit for full social life; but what if our social life and our whole civilisation are themselves diseased? In national and international spheres, wars, slum-property and unemployment are a few of the serious symptoms of disease of the body politic, and self-knowledge must replace self-respect before we can hope to see the community emerge in a state of health. Saints have always been regarded as unfit for social life, and it may well be asked whether there will ever be an end to the stoning of the prophets. When the Founder of the Christian religion was in the wilderness, the devil offered, as a reward for submitting to temptation, daily bread, prestige and power. Today each of these is regarded by the ordinary citizen as a justifiable and laudable ambition. Indeed, the will to dominate is found on every side in national life.

When, therefore, we inquire to what extent the individual is unfitted to social life, we must also ask how far society has made him unfit. Children are brought into the world in a highly irresponsible manner. From the economic point of view men and women are certainly not encouraged to marry at all,

though the reproductive instinct remains sufficiently strong to prevent any catastrophic decline of the population. In this connexion it is worth remembering that England was quite as important in the days of her seven million inhabitants in the reign of Queen Anne as she is today with her forty-odd millions.

People, I fear, are inadequately prepared for marriage, but even less are they prepared for parenthood. Where our rising generation would be if nature had not endowed them with the instinct of affection for children, I do not know. Even so, many folk are quite surprised when they find natural primitive hostility existing between two boys or two girls in the family, and they are often stupid enough to favour one child at the expense of another, thereby doing life-long harm to both. Some parents are even jealous of their own children, and I came across a schoolmaster who habitually neglected the cricket-coaching of his own son, whom he had never forgiven for being born at all, while lavishing instruction and care on his pupils.

I can only explain such ignorance by assuming that self-knowledge is entirely absent. Indeed, many people will say that even a little elementary introspection is morbid and unhealthy. A priest once asked me whether introspection was not morbid; he was answered when I asked him in his turn what exactly was meant by preparation and confession in the Sacrament.

* * *

I fear that Society likes to think and be told that it is well-nigh perfect, and that such imperfections as do exist are due not to the "normal" individuals who compose it, but to the queer people who discompose it! the awkward child, the oddity who refuses to run the course to order, the bitter critic of Society, and the misguided creature whose politics are not its own. To Society the last act of Shaw's "St. Joan" seemed an unpleasant sequel to an otherwise entertaining play; the pharisaical attitude towards the pharisees of the New Testament is still almost universal.

Fortunately the remedy is at hand, not only in the indispensable practice of introspection and self-knowledge, but in the building up of properly integrated individuals by the study of character. Analysis, biological and psychological, is giving the world of both herd and individual an enlarged sense of responsibility. So both will have the chance to develop a new order of things. But whether this can be done without bringing down in confusion the results of centuries of social growth is much more doubtful.

* * *

It follows from all this that the study of the neurotic must involve the study of his environment past and present, and especially his human environment. In all but the simplest cases, the father, mother, brothers and sisters and friendships of the patient are of paramount importance in calculating the possibility of the patient's readjustment to social life. The initial difficulty is to get the neurotic to understand that it is not his or her quasi-physical symptoms that matter but the emotional state underlying them. This is a task which has to be carried out without undue damage to amour-propre. The great thing is to let the patient see that the physician is interested in him and to get him to talk more about his life and personality than about his symptoms. Thereafter the novel idea that the trouble is due to emotional factors rather than physical facts can be rationally introduced by interesting him in simple psychological theses applicable to his case. Among these one may mention the use and abuse of the acquisitive, reproductive and herd instincts, Jung's conception of introversion and extroversion, and Adler's inferiority-superiority ideas. The neurotic, always interested in himself, will not put up much resistance to such handling and will soon become, surprisingly, a student of the technique.

But such analysis must always be accompanied by fresh efforts to rebuild the personality, and to furnish it with new ideas to replace the old emotional conflicts that are being resolved. Often, indeed, it will be found more difficult to finish treatment than to begin it. A humorous relationship on terms of equality between patient and doctor must at all costs be maintained. Only thus can the development of an insoluble transference be prevented. The patient must never be allowed to forget that he is largely responsible for his past weaknesses and his future recovery. In this country, at least, every individual is still responsible for his own character. Let us hope that this responsibility will never be surrendered to the herd, the emotions, the material world or even the physician.

THE PIRQUET AND MANTOUX TESTS

OUR Denmark correspondent writes as follows: Tuberculosis specialists in Denmark have found 50–70 per cent. of their Mantoux-positive reactors. The Norwegians, on the other hand, get a positive Pirquet reaciton in 90–95 per cent. of their Mantoux-positive reactors. Investigators in both countries have been puzzled to explain the difference. It is, indeed, so marked that while the Pirquet test is coming to have little more than historical interest in Denmark it continues to be the standard test in Norway, the Norwegians holding that its slightly greater margin of error is more than compensated for by its simplicity. Dr. J. Holm of Denmark and Dr. H. J. Ustvedt[1] of Norway have tried to solve this minor international problem by working together in Copenhagen and checking up each other's technique and interpretations as they tested 258 school-children and 72 young adults with both reactions. They found that with only a single Pirquet test they could get a positive reaction in only 73 per cent. of the Mantoux-positive children and in only 71 per cent. of the Mantoux-positive young adults. But when the Pirquet tests were repeated twice, these two percentages were increased to 90 and 87 respectively. They suggest that the more a community suffers from tuberculosis, and the more it is in consequence exposed to super-infections, the greater will be the sensitiveness of its members to tuberculin. In other words, in a community in which there is little tuberculosis, many of its members will be comparatively tuberculin insensitive, and will require two or three consecutive Pirquet tests or a Mantoux test if a positive reaction is to be evoked.

1. *Nord. Med.* Sept. 2, 1939, p. 2673.

IN spite of the taking over of spa hotels, all the British spas—Bath, Bridge of Allan, Buxton, Cheltenham, Droitwich, Harrogate, Leamington, Llandrindod Wells, Strathpeffer, and Woodhall Spa—have made arrangements for dealing with accommodation difficulties and it is usually possible to meet the requirements of prospective visitors. Invalids should communicate with the director or manager of the spa they require, or if in further doubt or difficulty with the honorary secretary of the British Spas Federation, either at the Pump Room, Bath, or at the Travel Association Information Bureau, 28, Cockspur Street, London.

LETTERS TO THE EDITOR

A PLAN FOR BRITISH HOSPITALS

SIR,—I think that on the whole the conclusions of your special commissioner are sound. There is no doubt that Harley Street is finished. There is no doubt that the voluntary system is finished, but there is some doubt as to what is to take its place. I am quite sure that decentralisation has come, and I like the regional distribution of the British Hospitals Association much more than the Emergency Hospitals Scheme, which seems to be based largely on county boundaries rather than hospitals and hospital accommodation.

I am not sure that I quite believe in the whole-time medical officer, certainly not for the senior posts. There is a great deal to be said for the continental scheme of having a senior who is allowed to do private practice and a considerable number of assistants who are full-time and hope eventually to rise to consultant status and become part-time. The general practitioner will not send patients to a man who is not known scientifically. I know men in London in the municipal hospitals who are doing remarkably good surgical work, but the general practitioner knows nothing about them, and such men would never get any practice outside their hospitals. If young men on full-time salary were encouraged to do as much original surgical work as possible I think one would get the best part-time consultants for the future.

I feel that the whole plan will have to be considered very carefully; it will certainly stimulate people to put down concretely ideas which have been simmering in their brains, and I feel that nothing but good can come from ventilating the subject.

I am, Sir, yours faithfully,

J. JOHNSTON ABRAHAM.

Queen Anne Street, W.1, Nov. 1.

SIR,—However troubled the dreams that have disturbed the slumbers of doctors since war began, I doubt if a more horrific nightmare could be imagined than the one so light-heartedly conjured up by your special commissioner on British hospitals. Encouraged by the impressive title that editorial expansiveness has conferred upon him, armed—if I may respectfully suggest it—by a unique unfamiliarity with both general and consulting practice, blissfully indifferent to the incurable eccentricities of human nature, well planted in his office chair, and equipped with paper, pen, and ruler, and with compasses to draw those attractive circles in which he proposes to impound both doctors and patients all over the map, he has devised a scheme for the future, particularly of our teaching hospitals, that I trust I may not live to see realised.

He begins in the true totalitarian style by summarily condemning the consultant to an early death, and by telling his victim that he is already moribund. Now I, for one, refuse to be killed off in this fashion to make an organiser's holiday. Up to the outbreak of war I—and many of my colleagues—felt in the best of professional health and looked for a normal expectation of useful professional life. True, since that date we have been nearly suffocated by the kind of organisation your commissioner desires to make chronic, but should we be so happy as to escape the paralysing toils of bureaucracy, we look forward to a resumption of useful service, and to arming ourselves against the future assaults of the would-be medical Gauleiter.

Nor have I any reason to suppose with your commissioner that hitherto I have lived "on the charity of G.Ps." I cherish the belief that when my services have been asked for they have been needed. I am not conscious of being the parasite your commissioner quite clearly implies. I let him down lightly when I say no more on this point. It needs no unusually penetrating mind to discover that the consultant must be liquidated, not because he is already dying, but to make room for the whole-time salaried medical officer to whom your commissioner has decided to give the control of the teaching hospital. The bait he offers is the professorial unit.

I myself have been a whole-time assistant in such a unit. I should be blind if I did not realise its merits, and ungrateful if I did not acknowledge the benefits I derived from my apprenticeship therein. Yet even the most enthusiastic advocates of the professorial Units would not maintain that the entire clinical education of the medical student should be confided to their care. Both whole-time teacher and practising consultant have things of value to give the student, and to turn the latter wholly over to teachers who make no contacts with the special problems of private practice would be doctrinaire obstinacy.

I venture to believe, also, that the general practitioner might not find to his taste the inevitable limitation of his choice in the matter of consultant and specialist advice to a small regionally available group. He would have no other choice under this scheme since all other consultants have been liquidated. How utterly remote from reality, too, is the suggestion that the consultant rarely has to visit the patient in the latter's home, and that the whole-time hospital officer will never have to leave the sacred precincts of his hospital for the purpose. How unsatisfactory, also, the opportunities of coöperation between the London general practitioner and the whole-time consultant who spends most of his time in the country hospital.

I note, however, that with a fine eye for expediency your commissioner refrains from attempting to regiment the general practitioner in any other respect than his choice of consultant. For the time being his neutrality is not to be violated, but who can feel safe from the determined organiser? He is never satisfied.

So much for the future of the teaching hospitals and their medical staffs, if such a grim prospect of helotry can be called a future, but how will the patient fare under this scheme?

Much is offered him in the way of financial relief, but nothing else. Because we *may* have another war in twenty years' time all our hospitals must all the time be in the country. As the pneumonia patient is whirled along the by-pass road in one of those Green Line coaches that so take the fancy of your commissioner, he will doubtless be consoled by the thought that should war break out before his own crisis is due he will not be bombed, and he will bear his perilous pilgrimage cheerfully in anticipation of the country air he is so soon to have the privilege of gasping in.

Yet, as your commissioner admits, there are still many who—like Dr. Samuel Johnson—find London the best of places to be well or ill in. Is it not an extremely healthy city? Men have been known to recover from the gravest illnesses in hospitals within the metropolitan boroughs, and doubtless will again. Further, the invalid likes to see his own folk, and they

to see him. Why impose upon them the burden of time and expense involved in journeys out of town?

Finally, what a picture comes to mind when we think of hospital staff and students careering in and out of London in Green Line coaches to and from the scattered fragments of their hospitals, each fragment wriggling on its own like the pieces of a chopped worm. Chaos and waste of time and money cannot be disguised by calling them decentralisation.

Indeed, it is upon the altar of this glib and euphemistic abstraction, this word of magic power, that your commissioner proposes to offer us up. To those able to distinguish between words and things it is not impressive. In this country we have always prided ourselves upon a rich store of native common sense. We should forfeit our title to this if we were to let ourselves be chained in the fetters of large-scale organisation, the ominous clanking of which upon our wrists we have heard in the past two months.

I am, Sir, yours faithfully,

Portland Place, W.1, Nov. 2. F. M. R. WALSHE.

SIR,—The profession owes a debt of gratitude to you for drawing attention through your special commissioner to the necessity for the speedy abolition of the existing schism in the hospital service. The hospital needs of the general population are one, and that the hospital service should be split into the two separate (and sometimes antagonistic) departments of voluntary and municipal is on the face of it absurd. Now that realisation of the need for rational organisation has been forced upon us, there can be few without axes to grind who will wish to see the schism further perpetuated.

All concerned with hospital medicine will probably share the views of your commissioner in favour of regionalisation and against centralisation. Centralisation in medicine spells death. For this reason it is surprising that your commissioner apparently relegates the pathological work of his hospital "firms" to a central laboratory having no connexion with clinical work. Your commissioner gives credit to the value of the work done by the clinical professorial units. Might I, as a former member of the staff of one of these, point out that the enduring purpose of my own unit at any rate was to bring the wards into the closest possible touch with the laboratory, and vice versa. In the view of my colleagues on the staff of that unit it was in this way, and this way only, that clinical medicine could best advance. Fifteen years after leaving the staff of that unit I find myself strengthened in that view.

It will not suffice if your commissioner's "advanced base" or "main country hospitals" relegate their pathological work to some central laboratory out of touch with clinical work. If the reformed hospital service is to make contributions to the advancement of medicine, it is essential that this work should be done in laboratories on hospital premises, in close touch with each clinical firm and under the supervision of practitioners acquainted equally with the problems of the wards and the laboratory.

I am, Sir, yours faithfully,

Wolverhampton, Nov. 1. S. C. DYKE.

SIR,—Your special commissioner has, I think, spoilt the balance of his report by what appears to be a rather venomous attack on consultants, illustrated by the following extracts:

(1) "The consultants get their patients by the charity of G.P.s."—This is offensive and not even true. The G.P. is anxious to call in a man whom he can trust, in his own interests as well as those of the patient. If the treatment or operation is not successful, the G.P. not uncommonly is blamed for his choice of consultant.

(2) "... go into a nursing home at 10 or 15 guineas a week and in addition find 120 or more guineas for the surgeon, anæsthetist and radiologist."—This takes no account of the cheaper beds in nursing homes or the pay beds in the voluntary hospitals. No consideration is given to the fact that in many cases the surgeon charges a far lower fee than 100 guineas after discussing the patient's circumstances with the G.P.

(3) "... our present 'rob the rich to pay the poor' consulting system."—Is it robbing the well-to-do, who can, let us say, afford to buy a Rolls-Royce or other four-figure motor-car, with corresponding houses and establishment, to ask them to pay 100 guineas for an abdominal operation?

He suggests that all the senior medical staff of the hospitals should be whole-time. In this case who would be the specialists whom the well-to-do and "very rich" might consult? How can whole-time men visit the homes of patients on those "rare occasions" when a specialist is needed? And on what grounds does he say "rare occasions"? He must know very little of consulting practice.

Your commissioner is evidently an enthusiast for bureaucracy in spite of his remarks about red tape. I cannot think that our consultants as a class would wish to be tied down to the whole-time service he suggests. A comforting position perhaps for those lacking in initiative, but one which holds out no prospects of the higher income which a man of energy, ability and enthusiasm should be able to command. Nor would it make for medical progress—the stimulus of competition would be lost.

I could write at length on the value to the country of the spirit that moves in our voluntary hospitals, where a patient is an individual and not a case, in such marked contrast to the conditions which obtain in hospitals abroad. Here we maintain the great inheritance of freedom and liberty, and through our voluntary system our students learn unconsciously to carry on the tradition of service which is one of the finest characteristics of our profession. Our voluntary hospitals, and the innumerable subscribers and workers who freely give their time to them, help to keep alight the torch of kindliness and compassion for those in distress.

I think the day will come when every great hospital in London will have a country branch—possibly a development of the present homes of recovery. It seems probable that before long the State will have to make grants to the teaching hospitals on the lines of the University Grants Commission. But I feel that the conversion of the staff of our hospitals into whole-time officers would be a national disaster.

I am, Sir, yours faithfully,

London, Oct. 31. ANOTHER SURGEON.

SIR,—To me it seems that the excellent plan for British hospitals set out by your special commissioner could be applied to tuberculosis and thereby check the debacle of tuberculosis schemes which is causing general concern. There is no doubt that it will be difficult to retain the casualty beds under the emergency hospital scheme at municipal and county sanatoria and at the same time build up adequate tuberculosis services. Public opinion is demanding the return of normal facilities for diagnosis and treatment despite the ever decreasing financial reserve which local authorities can draw upon for developing their tuberculosis schemes. In some areas there has been little or no change in the accommodation for the tuberculous.

In others there has been a severe encroachment on all tuberculosis institutions, even going so far as to convert handicraft shops into wards for A.R.P. purposes. But in all areas there has been disorganisation due to the rapid movement of masses of population. This has been particularly felt in the dispensary services which, although not so depleted as the bed accommodation, are confronted in many places with larger numbers to be dealt with by smaller staff.

Surely now is the time to begin to consider schemes for the reconstruction of a tuberculosis service for the whole country which will be an improvement upon pre-war conditions. We should recognise the necessity for:

1. Provision for diagnosis of symptomless tuberculous lesions.
2. Development of a rehabilitation scheme, based on the existing E.H.S. areas, providing remunerative employment for ex-sanatorium patients either in colonies or in special factories under medical supervision.
3. Formation of a national tuberculosis scheme, on lines similar to the proposed national hospital corporation, with regional control of prevention and aftercare, superseding the isolated and independent action of separate local authorities.

I welcome the Minister's suggestion of coöperation between the National Association for the Prevention of Tuberculosis, the Joint Tuberculosis Council and the Tuberculosis Association, with the immediate appointment of a committee to begin work on the problem. In such a way good may come out of the evil which has befallen us, and when peace returns we may already have the framework of a new structure free from the faults and extravagances of pre-war methods.

I am, Sir, yours faithfully,

Mill Hill, N.W.7, Oct. 31. T. B.

SIR,—Your outline for the future of British hospitals is admirable and I hope that such a scheme will be permanently adopted. From the G.P.'s point of view, may I raise a few small points:

(1) The increase in multiple G.P. firms to which your commissioner refers will go on for the benefit of the community, and the single-handed practitioner will eventually go the same way as Harley Street. However, the efficiency of these firms will be seriously reduced if they are deprived of hospital work, for the individual G.P. will no longer have access to his specialty. He will revert into a certificate-signer. I suggest it would be an advantage to all if the small outlying hospitals corresponding to the war-time casualty clearing stations (see your fig. 3) were staffed at least to some extent by part-time G.P.s. The whole-time consultants would work at the main O.P. clinics and the main hospitals.

2. No practitioner whether hospital or G.P. should be expected to work both by night and day, and wherever practicable there should be a G.P. and hospital night service of doctors.

(3) I was pleased to see obstetrics divorced from gynæcology. Under a whole-time service this may not be necessary, but to prolong the present system would be deplorable. The average gynæcologist today knows no obstetrics and avoids it like the plague, but has to pose as a consultant because no-one else will do it, and it is too small a specialty (and too strenuous) to be done alone in private practice.

(4) One hopes that the end of Harley Street will lead not only to the employment of the best men in favourable circumstances, but also to the end of some of the queer people to be found there.

(5) The salaries in your commissioner's plan are too small. The better posts should rise to £3000 p.a. while no job should start at less than £300 p.a. with board and lodging. After all a man has done six years training before he starts a junior job and to offer him wages little more than a labourer is a poor reward. The juniors won't all get the best jobs and every post should provide comfort commensurate with the type of work being done, plus sufficient to enable one to educate one's children in the best possible way.

I assume that all jobs, whether hospital or G.P., will be pensioned. It is more difficult to be a successful G.P. than a successful specialist.

I am, Sir, yours faithfully,

Reading, Nov. 3. STANLEY C. ALCOCK.

SIR,—Editors and writers to the medical journals dance at what they consider to be the funeral of the voluntary hospitals. This behaviour is the more indecorous since the E.M.S., which in their opinion spells the death of the voluntary hospitals, has only been made possible by the loyalty of "those most stout and gallant last ditchers of the medical profession, the consultant and specialist group." This peculiar brand of persons who depend on "the charity of the general practitioners" (inspired individuals "able to solve almost all difficulties of clinical diagnosis by discussion between partners") still persist, in spite of your special commissioner, in considering "The Hospital" rather more than bricks and mortar and very much more than words and paper. They realise that like most live bodies the voluntary hospitals have many faults which they see could be, and are being, remedied by coördination and planning, hindered chiefly by lack of money.

They think that abolition would be a sad end to centuries of inspiration and service, and since they too are sometimes able to solve clinical problems by discussion, they believe that there are better cures for headache than decapitation. In war the bureaucrat is master, and floods of paper and words may well submerge the voluntary hospitals while they are serving in the front line, but before dancing exultantly on their coffins, it would be well for the bureaucrats to make quite sure that the bodies of their victims are inside.

I am, Sir, yours faithfully,

TEMPORARY CIVIL SERVANT.

War Hospital, Nov. 1.

SIR,—Dr. Izod Bennett's criticisms of your special commissioner's report show, I think, a metropolitan strain; perhaps he should be reminded that the article was entitled "a plan for British hospitals." Your special commissioner says of medical committees:

"... admittedly the medical committee of a voluntary hospital is not perfect—occasionally its decisions are influenced by self-interest—but it does represent a remarkable pooling of professional knowledge, far more capable of taking an all-round view of medical problems than any medical superintendent. If members of medical committees were freed from the monetary claims of private practice their decisions would probably be as wise and unbiased as anything human can be."

Vested interest is, I believe, a serious drawback to the development of the voluntary hospital. I remember in my student days all the fractures were admitted under the care of the general surgeon for the week, who, as a rule, did not take great interest in his fracture cases, frequently leaving the treatment to his house-surgeon; but, when a young and enthusiastic orthopædic surgeon suggested that all fractures should be admitted under the care of the orthopædic department, he was met by a storm of protest and not a little abuse. Such phrases as "trying to steal the

bread and butter out of the surgeons' mouths" were to be heard.

I know of a provincial hospital in which the obstetrical and gynæcological department is staffed by general practitioners, but the operative work is done by the general surgeons who are in consulting practice in the town and include gynæcology in their private practices. The medical board of this hospital "passed over" an experienced gynæcological specialist—a first-class surgeon—for two practitioners with little or no operative experience. How often does one read in the advertisements of practices and partnerships for sale, "ingoing partner is likely to be appointed honorary surgeon to hospital."

I fully agree with your special commissioner that if the members of medical committees were freed from the monetary claims of private practice their decisions would probably be as wise and unbiased as anything human can be. At the present time, however, the vested interest of private practice combined with shortage of hospital funds is a serious drawback to the development of the voluntary hospital.

I am, Sir, yours faithfully,

Nov. 4. GENERAL PRACTITIONER IN THE NORTH.

SIR,—Your special commissioner deserves to be congratulated on his realistic report on the future of British hospitals and specialist medicine. His deductions seem to me incontrovertible. At this critical moment in the development of medical services a frank statement of the position is of great value, and one hopes that the report will be widely read.

I have two comments to offer. The report assumes that panel practice (with extension to relatives of the present insured population) will continue, and this I regard as unwise. In the long run I feel sure that general practice with remuneration on a per-capita basis and additional fees for private work will prove unsatisfactory for medical services, particularly if all, or nearly all, specialist work is to be on a whole-time salaried basis. It may be a safe rule for reform to make as few initial changes as are consistent with moderate success in the working of a new organisation, but I believe that a large number of practitioners both in town and country would now welcome the opportunity of being included on a salaried basis in a regional medical service. To eliminate the evils of competition in specialist medicine while leaving it untouched in general practice (where it is working the greatest harm) seems illogical.

Secondly, I suggest that THE LANCET invites opinions from men and women with first-hand responsible experience of both municipal and voluntary hospitals on the report's recommendations for internal hospital organisation. I confess that the idea mentioned in your leading article in the same issue of a "bigger and better type of hospital medical administrator" fills me with apprehension!

I am, Sir, yours faithfully,

Inverness, Oct. 30. DUNCAN LEYS.

SIR,—Your commissioner has performed a public service, for when we see the medical organisation of the country crumbling before our eyes, we should all be giving serious thought to the future of our profession. The subject is one about which few of us can write without betraying our prejudices. We do not wish to lose what we know and like; for one man this means retaining many of the features of the voluntary system and rescuing the consultants from "penury," while for another it means extending the municipal system and retaining the medical superintendents. Our zeal for the common good is tempered by the interests of ourselves or of our kind. My main ground for criticism is that the plan is not wide enough. It is a plan for British hospitals, while the public need a plan for a general medical service. The Ministry of Health is considered a nuisance, so it is to be replaced by something new. It is a little hard on the Ministry that it should have to bear the brunt of the complaints provoked by the Emergency Medical Service, an organisation which is very much under the influence of the voluntary hospitals and the British Medical Association. The peculiar conditions of this kind of war have made many institutions and individuals vulnerable, and even the British Broadcasting Corporation, which in the plan is held up as a model, has not entirely escaped censure. In my past experience the contacts of the Ministry with the poor law hospitals were entirely beneficial. My complaint used to be that the small size of the staff made such contacts rare events. The relaxation of control which has followed the passing of the Local Government Act of 1929 was, I think, a retrograde step.

The plan pays scant attention to the subject of preventive medicine. Nothing is done for infectious fevers, tuberculosis, or "chronic" cases. Maternity work is represented by 60 beds for a population in which there will probably be about 10,000 births a year. Child welfare and the school medical service are left outside the purview, and the whole of the present domiciliary or general-practitioner service is accepted with little modification. The limitations of your commissioner's vision are indicated by the allocation of beds in the hospital. There are 320 beds for general surgery and 240 for medicine. This may be the proportion customary in voluntary hospitals, but it does not correspond with the proportions of surgical and medical illness in the population at large. Up to the present the voluntary hospitals have been able to select for admission such cases as they liked, without any feeling of responsibility for the classes which were rejected, or without considering the effect which the skimming off of the interesting and stimulating cases might have on the hospitals or institutions which had to treat the residuum. This policy is now being called in question. The responsibility of hospital administrators is wider than many have yet realised. A hospital should be a dynamic centre of the health service. It should not selfishly retain its emotional drive within its own boundaries, but should radiate stimulation and help, as widely as possible, throughout all the agencies concerned with the public health.

It is with this thought in mind that the plan of your commissioner should be examined.

I am, Sir, yours faithfully,

HENRY H. MACWILLIAM,
President of the Medical Superintendents' Society.
Walton Hospital, Liverpool, Nov. 3.

THE CONSCRIPTED PSYCHOPATH

SIR,—The letter of Dr. Ross in your issue of Nov. 4 certainly brings up a matter of great importance, and I, for one, would be more than grateful if he could help us to spot such cases. It may or may not be generally known that the medical boards are supposed to examine 30 recruits in 2½ hours—which thus allots 5 minutes to each of the five examiners for each recruit. Before the medical boards began in June I protested to the Ministry of Labour that it was not possible to examine men thoroughly in this time. I was then shown a memorandum by the authors of the regulations by which the boards work. In this it was stated: ". . . and after a little experience, it will be found that they can examine 45 or even 60

in the time (2½ hours)." In practice I find that it takes us 3½ hours to examine 30 men, and even then one has misgivings that some of the gradings have been given incorrectly. It follows that Examiner No. 1 of the board has at most 6½ minutes to test the vision, to examine the nervous system, and to take a complete medical history. Is it, therefore, to be wondered at that occasional mistakes are made by this examiner, or, in other cases, by the other examiners? I admit that where a recruit brings a medical certificate such a case as that quoted by Dr. Ross should not occur. If Dr. Ross, with a realisation of our difficulties, could help us to recognise these cases in a few minutes—or moments—no one would be more grateful than I.

I am, Sir, yours faithfully,

Nov. 5. CHAIRMAN OF A BOARD.

SIR,—Dr. T. A. Ross opportunely calls attention to the importance of a history of psychiatric illness before enlistment in many of the men who suffered from so-called shell-shock in the last war, and I should like to support his thesis by actual figures.

In discussing predisposition to breakdown as revealed by the history obtained from such patients, I wrote (Psychoneuroses of War and Peace. Cambridge University Press. 1920. Pp. 39 and 40):

> Some standard is necessary, and I have taken as mine the consideration whether, with my present knowledge, I would on psychological grounds have rejected the man on examination before enlistment, with his previous history, as now known, placed before me. . . .
>
> The detection of predisposing factors depends upon experience in investigation; to estimate this influence I divided my series into groups corresponding to the first and second half of the period during which I have been engaged in this work. In the first half, of 223 cases, 156 (70 per cent.) were found to have no predisposition; in the second half, of 192 cases, 83 (43·2 per cent.) were found without predisposition. There having been no selection of cases in these two periods, the difference is probably due to my increasing knowledge of what history is likely to be found; it follows that further experience would still more decrease the percentage of cases showing no predisposing factors, but I have not yet reached the conclusion that every patient must have had a predisposition to nervous breakdown. . . . I give examples in chapter 15 of men who, seemingly possessed of more than ordinary courage, finally succumbed to continual strain.

I noted in a later passage that members of a predisposed group that I called "psychasthenics" sometimes withstood with great endurance the strain of war; I would now amend this by separating a group of obsessional self-drivers who, though presenting nervous symptoms, are often capable of excellent work and whose exclusion from service should not be recommended even though there may be a tendency to ultimate breakdown. Captain Stanhope in the play *Journey's End* is a perfect portrayal of such a self-driver, with his obsessional make-up so accurately presented that we are reminded how the novelist or playwright is often a better psychologist than the medical man.

Even when allowance is made for this emendation, the number of men who should have been excluded is not greatly reduced, and one may say that in one group of hospitalised mental patients about 50 per cent. were the country's bad bargains and should not have been enlisted in the combatant forces. A statistical table showed how the average period of service abroad was nearly halved in those with predisposition, thus confirming the practical value of my classification. This period sank from 20·5 months, in those with no predisposition, to 2·7 months in those whose already existing symptoms, unaltered by warfare, were bad enough to bring them to hospital. This latter group (10 per cent. of the total) were not merely predisposed to breakdown; they were candidates for hospital treatment when they enlisted.

To Dr. Ross's examples I will add one story told me by the man concerned, who, among other troubles, had given up jobs and left lodgings because of a delusion that he infected people with a dangerous skin rash, and carried with him a certificate from a dermatologist saying, "I hereby certify that Mr. X is not suffering from any infectious skin disease, although he thinks he is." He sought to enter the Territorials a year ago, but when the examining doctor produced a stethoscope he felt it his duty to warn him about his powers of infection and produced the certificate. "What happened then?" "Oh, he showed it to the other doctor and they had a laugh about it and passed me in." Probably an expensive laugh.

I am, Sir, yours faithfully,

Queen Anne Street, W.1, Nov. 6. MILLAIS CULPIN.

SIMULTANEOUS IMMUNISATION AGAINST TETANUS AND TYPHOID

SIR,—Active immunisation against tetanus by toxoid has now been adopted, and many of our soldiers in France have already been inoculated. Immunisation against enteric fever was carried out during the last war by injection of T.A.B. Ramon and Zoeller in 1927 advocated the simultaneous injections of T.A.B. and tetanus toxoid since they had found that the prophylactic effect of each was increased thereby.

The protection given by T.A.B. is by no means complete. There were 4000 cases of enteric fever among inoculated soldiers during the four years of the great war, and in a small American contingent of 248 men, all of whom had been inoculated, 98 contracted the disease.

Intravenous injection of the vaccine in rabbits produces much more immunity than subcutaneous injection in man, but this method cannot be used because of the severe "protein shock" which would occur.

If endotoxin cannot be used for human immunisations, endotoxoid (endotoxin detoxicated by formalin) can. It has been prepared by Grasset[1] of Johannesburg, and used with great success for several years. The immunity is both antitoxic and antibacterial. Subcutaneous injection never caused enough reaction to interfere with the miners' work. In one mine in which 60,000 workers had been inoculated during the years 1935 and 1936, there was only 1 case of typhoid and 2 of paratyphoid, while during the two previous years the mortality was an average of 5 per 1000, with a mortality of 1 per 1000 in those subjected to systematic T.A.B. immunisation. The success of endotoxoid inoculation led to a steady increase of those volunteering for immunisation, rising from 21,700 in 1933 to more than 160,000 in 1937.

It would seem that two subcutaneous injections of equal quantities of tetanus toxoid and typhoid endotoxoid, followed at an interval of six weeks, or preferably three months, by twice the dose, would give permanent and solid protection to our troops against both tetanus and typhoid fever.

I am, Sir, yours faithfully,

Worthing, Oct. 30. HERBERT H. BROWN.

1. Grasset, E., *Brit. med. J.*, 1939, **2**, 58.

RADON SUPPLIES

SIR,—The radon centre at the Middlesex Hospital has been transferred to quarters in Bedfordshire, by the courtesy of the management of the Barton Lime Co., and supplies of radon will be available as from Nov. 10. The expenses involved in the transfer of radium and plant and the equipment of the new quarters are being borne at present by the Medical Research Council and the British Empire Cancer Campaign. The accommodation is being shared by the London Hospital, who are installing their radon plant there. Radon from 1½ grammes of radium will be available from this emergency centre. Should the demand for radon exceed the supply, it is probable that other former radon centres will join in the scheme, bringing in additional quantities of radium.

It is proposed to charge a flat rate of a shilling per millicurie, but it is recognised that for some forms of treatment radon at this rate may prove too expensive for many users. For example, the treatment of uterine cancer by the Stockholm technique would involve supplying 125 millicuries on three separate occasions. The use of 125 millicuries for 22 hours (first treatment) would utilise less than 20 per cent. of the radon supplied. This running to waste of 80 per cent. of the supply can to some extent be minimised by arranging that several cases are treated by means of the one supply. Certainly two and possibly three patients in series could adequately be dealt with, provided we can get collaboration to this end. If institutions would bear this in mind when requisitioning radon, a great saving can be effected, and many more patients can be treated.

Platinum radon seeds will be charged at cost, but ordinary platinum screens and applicators will be lent free of charge.

Communications should be addressed to the Radon Centre, c/o Barton (Beds.) Lime Co., Barton-in-the-Clay, Beds.

I am, Sir, yours faithfully,

SIDNEY RUSS.

Barnato Joel Laboratories, The Middlesex Hospital, Nov. 6.

EXPECTORANTS

SIR,—As a practitioner long nourished in the faith that potassium iodide and ipecacuanha were expectorants, and as a taxpayer responsible, in however minute a degree, for finding the monies which are paid out by the Medical Research Council, I hope that Dr. Stanley Alstead will complete the research of which the first part is published in your issue of Oct. 28.

He has taken, it seems, 17 cases of chronic bronchitis (although only 16 appear in his fig. 1) and has kept "nearly all" of them in bed. He has then proceeded to administer pot. iod. gr. 5 to 10 for varying periods and at unstated intervals, followed by ipecacuanha in constant doses but again for varying periods. During this time he has observed the amount and character of the sputum, though his remark "the mucoid sputum of one patient became even more watery" suggests that "mucoid" and "watery" were regarded as interchangeable terms. Having done all these things, Dr. Alstead has demonstrated a reduction in the daily output of sputum and has suggested that this must have been due to the hospitalisation of the patients. It is likely enough that his deduction was correct, but he then goes further and insinuates that his research also shows an absence of expectorant activity in both of the drugs mentioned. There seems to be nothing in his paper to warrant this conclusion. It is quite possible that 17 other patients treated in the same manner, but without the drug, would have shown a much greater fall in sputum output. Until we have Dr. Alstead's figures for some such group of controls the value of pot. iod. and ipecac. must remain uncertain, the expenditure of the Medical Research Council unjustified and the reputation of scientific research in this country just a little lower than it ought to be. May one add that the value of ipecac. cannot be tested to any advantage by administering it only to those who are already deeply under the influence of another drug?

I am, Sir, yours faithfully,

Sevenoaks, Oct. 31. GORDON WARD.

ARTIFICIAL RESPIRATION IN FIRST-AID

SIR,—Your special article on this subject[1] invites one criticism. It is suggested that in carbon-monoxide poisoning immediate artificial respiration is required. Actually, it is a subacute asphyxia, in contrast to drowning and electric shock, which are very acute. In carbon-monoxide poisoning, breathing fails from lack of CO_2 rather than oxygen, and immediate artificial respiration without CO_2 being given actually may do harm by washing out what little CO_2 remains. The need for CO_2 is immediate and to waste time sending for a bulky cylinder of oxygen mixture is a mistake. Fresh air contains quite enough oxygen for ordinary resuscitation. The first essential is to supply CO_2 and I never venture on duty without my pocket supply in the emergency bag. Given a source of CO_2, artificial respiration becomes a necessary and rational procedure.

I am, Sir, yours faithfully,

Bovingdon, Oct. 24. GILBERT BURNET.

MALARIA AND WAR

SIR,—In connexion with Sir Rickard Christophers's masterly presidential address reported in THE LANCET of Oct. 28, it might interest your readers to hear of my experience of malaria during the Ethiopian Campaign 1935–36.

The campaign started on Oct. 3, 1935, and ended on May 9, 1936. On the northern front a number of zones, such as the Mareb region, were badly malarial, and on the southern front all the zones were terribly malarial, the disease being general among the indigenous Somali population. With an army of 500,000 men (including the large militarised labour force) there were during the whole period of the war 1241 hospital admissions for primary malaria and 1093 admissions for relapses, with 23 deaths from pernicious forms, including black-water fever, which was extremely rare. Judging from the East African campaign during the war of 1914–18 an enormous number of hospital admissions for malaria and over 2000 deaths might have been expected. In the East African Expeditionary Force, which in 1916, in round figures, was 50,000 strong, there were during the period of seven months, June to December, 15,768 admissions to hospital for malaria, with 263 deaths. In 1917 the strength of the Expeditionary Force was 50,000 men, and there were 72,141 admissions to hospital for malaria, with 499 deaths. In the Macedonian Expeditionary Force also malaria was a scourge. This force in 1917 consisted of 182,000 men and there were 71,412 admissions to hospital for malaria, with 228 deaths. The bulk of the cases, namely 60,977, occurred during the period of seven months, May to November, which in the Balkans is the malaria season. In Equatorial Africa the malaria season may be said to extend the whole year round. Very heavy losses from

1. Killick, E. M., Cowell, E. M., and Crowden, G. P., *Lancet*, Oct. 21, p. 897.

malaria were also sustained in Macedonia by the French and Italian forces.

What were the prophylactic measures taken during the Ethiopian campaign? With the troops continuously on the move and the area of operations being enormously extended, mechanical prophylaxis, such as mosquito nets, and anti-larval measures were often impossible. From the beginning we insisted on quinine prophylaxis: every soldier received 3 tablets a day of quinine sulphate or bihydrochloride—each tablet containing 0·2 g. (gr. 3)—and took them, good example being given to the ranks by those in authority: at every meal the Commander-in-Chief in Somalia, Marshal Graziani, and all his staff officers took quinine regularly. The men also knew that we could find out whether they had taken quinine or not. They were frequently paraded and 1 in every 10 or 20 men was made to pass urine. This was tested with Tanret's reagent: on adding a few drops of this reagent, if quinine has been taken, the urine becomes turbid; if quinine has not been taken the urine remains clear.

Quinine prophylaxis is, of course, a clinical prophylaxis. It does not prevent infection but prevents the clinical manifestations of the disease. The soldier may harbour the malaria parasite, but feels well and is fit to do his work, and this is most important from a military point of view.

I am, Sir, yours faithfully,

ALDO CASTELLANI.

London School of Hygiene and Tropical Medicine, Oct. 31.

TREATMENT OF VENEREAL DISEASES IN THE FIELD

SIR,—I am not in disagreement with the letter in THE LANCET of Nov. 4 by Dr. Lloyd and Dr. Erskine. A reference to my letter of Oct. 28 will show that my words were: "The following routine, which has proved so successful at Whitechapel Clinic, can just as efficiently be carried out in the field." I did not say that the Whitechapel routine is the best—I merely stated what that routine is. Since the experience in the V.D. department at Guy's Hospital is that equally successful results in gonorrhœa can be obtained with a considerably lower total dosage of M. & B. 693, then it naturally follows that such a dosage should be adopted. The sole object of my letter was to show that the most thorough modern treatment for V.D. can be carried out under active-service conditions. If it is shown that a dosage of even less than 15 g. in five days secures satisfactory results, so much the better.

I am, Sir, yours faithfully,

E. T. BURKE,

Nov. 6. Director L.C.C. (Whitechapel) Clinic.

EVACUATION AND EDUCATION

SIR,—The mass uprooting of countless numbers of children and their forced transplanting into untried surroundings has turned the searchlight on educational methods. The training in the three Rs is an acknowledged adjunct to civilisation while controversy rages over the best route to literacy. There is no question as to the best route for the physical side. That must be in the training of the individual, but that is not in the purview of the authorities, although it is of so much greater importance. It is left to the idiosyncrasy and enterprise of the teacher. The seriousness of this lack has now been thrust into focus and cannot be ignored. General well-being is relegated to the public-health departments whose powers are limited to what can be done for the multitude as a whole, leaving the individual to the mercy of his own instincts and to take his chance of outside help like the animals. The school medical services do not fill the gap. Their function is to seek out defects without any direct means of dealing with them nor of preventing them. The time that can be allowed for each child is sufficient for little more than a cursory scrutiny of any single case.

Personal hygiene is not on the syllabus of the training colleges. It follows that it is not to be found in the curricula of the schools. Many parents realise that it is a subject that is ignored and take no responsibility. The correspondence in the press is revealing a widespread lack of knowledge of, for example, dealing with waste, whether from the lungs, the alimentary canal, the kidneys or the skin. The habits of the human parasites are a no-man's-land although they are the cause of untold suffering and disease in all crowded communities. National fitness cannot be attained unless the foundations of personal hygiene are laid in the early days of infancy by parents who in their turn have received instruction in their school days. When school days are over and scattering begins the opportunity is lost for ever for the majority, and the ship goes off without a rudder.

In a recent number of THE LANCET the Indian Red Cross is mentioned as having financed lectures on blindness and its prevention. The need for such is here with us, and not only for blindness but for deafness and for many other preventable ailments. The chief cause of deafness is known to be mouth-breathing and the nasal neglect that accompanies it. It appears likely that the chief cause of eye trouble is the same, since the interocular space is apt to be involved with the rest of the nasal passages. Gapers in glasses are to be seen everywhere showing the close connexion between the eyes and the upper airways. These are but two of the disastrous results of ignorance of the correct care of the breathing organs. Many troubles arise from lack of care of the other organs which might be kept in good going order if good habits were established during childhood.

I am, Sir, yours faithfully,

Wimpole Street, W.1, Oct. 23. OCTAVIA LEWIN.

PLIGHT OF THE NEWLY QUALIFIED

SIR,—You have lately published letters from medical students setting forth some of their grievances against the emergency arrangements for medical education. May I draw attention to the position of the recently qualified man? I believe my own case to be typical of many. I registered with the B.M.A. for war service when war broke out, a few months after I had qualified and before I had secured a hospital appointment. My name was placed on the list of applicants for commissions in the Royal Naval Medical Service, but soon afterwards I was informed that it was likely to be "some time" before I was called on. The advertised vacancies for house-surgeons or physicians, where previous hospital experience is not demanded, now number on an average only three a week, and it is hardly surprising that my efforts to secure one until the Navy requires my services have so far been unsuccessful, for I understand that there are between 50 and 60 applicants for each vacancy.

If this state of affairs is general, why are students to be enabled to qualify more quickly than in peace-time, so as to increase the output of doctors? The assumption appears to be that more doctors are required in war-time than in peace, whereas at present at any rate the reverse is true. Is the growing body of unemployed doctors to wait until mass air-raids on our cities and large-scale land and sea operations have created vacancies in the Services and civilian hospital

staffs? And if so, how are its members to live in the meantime? Many parents have sacrificed for years to allow their sons to qualify as doctors, in the belief that qualification meant an end to their sacrifice: are they now to continue to support them, while the knowledge they have acquired is put to no use?

THE LANCET of Oct. 21 quotes a Soviet delegate to the cancer congress at the New York World's Fair as saying that in the U.S.S.R. "a position is immediately found for every graduate by the government." Whatever one's views on the Soviet system in general, one cannot help regarding this particular feature of it with envy.

I am, Sir, yours faithfully,

Oct. 31. UNEMPLOYED.

SIR,—In two recent articles in THE LANCET the writers seem distressed that house-officers are at last being paid a living-wage. One suggests that all a house-officer needs is enough to pay for his clothes and an occasional hair-cut; the other is a little more generous in suggesting £150 per annum. Before he is qualified he is relieved of considerable sums as exam fees, and after he is qualified he is to be paid less than a stretcher-bearer. He, at least, won't be a war profiteer.

I am, Sir, yours faithfully,

Forest Hill, S.E. 23, Nov. 2. D. MACDONALD.

CONSTRUCTIVE BIRTH CONTROL

SIR,—In your issue of Oct. 28 you report that in the House of Commons Mr. Williams said: "I never thought I should live long enough to find that the three Service departments and the Treasury had become the greatest advocates of the Marie Stopes theory." In justice to myself, may I point out that the "Marie Stopes theory" was published in 1918, when, in "Wise Parenthood," I said: "I urge young couples who truly love, to have all the children to whom they can give health and beauty, even if by doing so they sacrifice their personal luxuries." This has consistently been the policy of my clinics for constructive birth control, and the nation owes to me many thousands of babies born in health and beauty who would otherwise not have come into existence.

I am, Sir, yours faithfully,

Dorking, Surrey, Nov. 1. MARIE C. STOPES.

POITRINAIRE'S ERROR

SIR,—In view of Dr. A. S. M. MacGregor's letter in your last issue, I want to offer my most sincere apologies to Glasgow for the suggestion in my "Grains and Scruples" of Oct. 21, that her surgeons were lagging behind in chest surgery. I was led to make the statement from a conversation I had with a young Glasgow surgeon, but obviously I misinterpreted the position. It is good to know that Glasgow is, as usual, in the vanguard of surgical advances.

I am, Sir, yours faithfully,

Nov. 4. A POITRINAIRE.

The Royal Society has awarded the Copley medal to Prof. THOMAS HUNT MORGAN for his work on genetics and evolution. The establishment of the chromosome theory by the brilliant school which he founded was a work of genius. Today he is still actively researching, and he can contemplate the successes of his pupils and a host of his pupils' pupils; he can see innumerable and fruitful applications in the breeding of plants and animals, and even beginnings in the betterment of man himself.

. . . . IN ENGLAND—NOW

(FROM OUR PERIPATETIC CORRESPONDENTS)

THE identity of a voluntary hospital is a curious thing—something allied to the tradition of an old family or the spirit of a great school. We had thought that it existed in the past by virtue of the continuity of its personnel and of its work. We have now learnt that it can continue to exist and to fight gamely for its continuity in the absence of its personnel and in conditions so changed that their logical effect should have been acquiescence in a new order and complete loss of identity. Your special commissioner recently pointed out the value to medicine in the past of the spirit of the voluntary hospitals, and the events of the past few weeks have vindicated this opinion. This persistence as an entity in the face of great odds has been most evident among the special hospitals and the story of the ophthalmic hospitals of London during the first two weeks of war well exemplifies this.

Many factors contributed to make the ophthalmic services of London at the start of the war an urgent problem. An ophthalmic hospital is usually dealing with a disproportionately large number of outpatients compared with inpatients. Then the extreme urgency of many of the cases, even those of quite minor surgical importance, must be remembered. As one patient put it, "A bit of grit under your upper lid will take your mind off any war!" while from the oculist's point of view a detached retina or an acute glaucoma is a very real emergency. Thus the number of civilian patients requiring immediate treatment alone made it impossible for the ophthalmic hospitals to accept the Ministry of Health's recommendation to close down until suitable ophthalmic units could be formed in the base hospitals. The story of Moorfields is typical.

At the beginning of September the hospital had been as nearly as possible cleared of inpatients and a first-aid post and decontamination station were being set up on the ground floor and a bomb-proof shelter capable of holding 200 persons constructed in the basement. The hospital in common with the rest of the eye hospitals was recommended to close, but within a few hours of the outbreak of war 150 patients had presented themselves for treatment, most of them urgent cases and at least 30 of them new patients. Only two members of an honorary staff of twelve were available, but with these and as many assistants as possible the work was got through. A certain number of cases (mainly detached retinæ requiring operation) were admitted and were nursed in the corridors in the centre of the building, out of the way of glass and outside walls. The number of outpatients steadily increased until during the third week of the war it reached 382 in a morning, of whom 89 were new patients. This figure is about two-thirds of the normal peace-time attendance. It was thus apparent that the hospital must go on, and at a joint meeting of the committee of management and the available members of the medical board it was decided to maintain outpatients with the depleted staff who volunteered for increased hours of duty and a group of reappointed clinical assistants, registrars and refractionists; further it was resolved to open 20 per cent. of the beds to urgent cases until adequate protection of the windows made it possible to use more, and to provide a country annexe in which the waiting list (then over 300) of cataracts and non-urgent operations could be worked off. This plan was approved by the Ministry of Health. The annexe eventually found was a fully equipped privately owned hospital of fifty beds which was secured at a low rental for a year. The total cost of running the main hospital in City Road on this new basis plus the annexe at Edgware worked out at about £15,000 less than the usual peace-time expenditure for a year on City Road alone. The hospital now has 100 beds in use and the waiting-list has been

already reduced to 250, while full outpatient services are available, and in addition training of postgraduate students continues.

This story of obstinate persistence in the face of theoretical abolition by the Ministry of Health has been repeated at the other London ophthalmic hospitals, though against much greater odds, since not only their surgical staffs but also sometimes their nurses and porters were posted elsewhere. Today however all five are open and working with their identity intact. The Westminster Ophthalmic Hospital succeeded in remaining open for outpatients from the beginning. Now 40 per cent. of its beds are in use, including the private wards, its orthoptic and light departments are running, and it has secured the services of a visiting physician. An ophthalmic unit staffed by its surgeons and nurses is working in association with Charing Cross Hospital (of which it has always been the ophthalmic department at a base hospital in the country. The Royal Eye Hospital has suffered severe losses of staff, and though having only 10 of its 52 beds in use is seeing an average of two-thirds of its peace-time outpatients—in spite of having only one member of its surgical staff available, though he is working as a full-time officer. The Western Ophthalmic Hospital has also remained open continuously and is now running on a peace-time schedule with all its beds open; it is looking for suitable premises for a country annexe for waiting-list cases if Marylebone Road becomes inadvisable.

The Central London Ophthalmic has suffered most, having lost all but one of its surgeons, its matron, all its nurses, and its porters to the Emergency Medical Service. Yet in spite of this paralysing depletion it maintained its outpatient department from the beginning. It was unfortunately unable to maintain beds, but every effort is being made to remedy this and we hope to see it successful in the near future. Here as in every other eye hospital in London the loyalty of the remaining members of the staff to the spirit of the hospital has been apparent, and everywhere retired senior surgeons have returned and volunteered for duty rather than see the continuity of service of their hospitals lapse for a day.

* * *

Like most others we in Oxford were dumbfounded when the threat of war became an actuality, but as soon as I recovered from this inhibition—and preparations for massed air attack accelerated this recovery—I told my people to carry on with their ordinary research work and all heads of departments in the medical school spontaneously did the same. Very speedily our two axis powers, the Brains Trust and the Pathologists, showed the now familiar symptoms of one of their periodic urges for expansion. The Brains Trust saw that it was an ill wind that blows no one any good, and though other people's war aims might be obscure their own was perfectly clear. Whatever else the war was fought for, it would accelerate the study of injuries of the central nervous system, and so the somewhat non-aryan background of the Nuffield Surgical department was relieved by a sprinkling of khaki and aerial blue. Since Australia replaced Denmark at the head of the Pathologists, their party sign has been a genuflexion at the word Research, and under an inspiring leader they have already won great spoils from the M.R.C., the B.E.C.C. and the Nuffield Benefaction. But their state has a totalitarian vigour of digestion and appetite, and they advance to new projects as Hitler leaps from Czechoslovakia to Poland. They have decided that the war will be won by Research, and I have little doubt that they will leave their mark on the national budget. Others hesitated for a moment and toyed with the idea of abandoning their present fruitful researches for some ad-hoc war problem, but fortunately better counsels prevailed, and the fundamental work on the vitamins, brain metabolism, hormones and neuromuscular transmission continues. The links between neurosurgery and neuro-anatomy have been tightened and the biologists have discovered that the healing of nerves is a fascinating subject. Clinical medicine, which had been working for the last year on hæmorrhage and shock, and also on nocturnal enuresis, found almost to its surprise that it had become topical, and it now shows symptoms of straying into the no-man's land of applied psychology. Yoga has told us that anything can be achieved if we breathe correctly, and anæsthesia is after all the applied physiology of respiration. Whatever the reason, the department of anæsthetics has become more hush-hush than any of us, though rumour says that its debonair professor has been seen at places as far afield as New York and Lisbon, and we can only hope that he did not meet Olga Pulloffski. Whatever happens, babies are born and Professor Moir continues to make his ingenious models and measurements. Time will not permit me to enumerate the numerous distinguished evacuees from home and abroad whom we are sheltering, but I may be forgiven for telling the special honour we feel in offering hospitality to Loewi on the pharmacological side and Trueta on the surgical.

Is research flourishing at Oxford? I hope I have said enough to show that it is. Our only fear is that we may be considered twittering scientists, sheltering under the research umbrella. Nevertheless this is a great munition factory for discovery and teaching in medicine, and our carefully selected personnel is better employed here than inspecting sore feet or twiddling its thumbs elsewhere. There is none of us who is not ready to go to any post for which the Medical Research Council or the Royal Society may consider us better fitted, whether here or abroad. Many of us remember the comradeship of the dugout: the old women selling lemon soles on the pavements of Doullens; the gas-school way behind the lines with that marvellous dinner of chicken and garden peas, and the stout French hostess who called you Mon petit piccanin. As we meander slowly home in the blue darkness of a blacked-out train or day-dream in committee, these are the pictures that flit before our eyes, and we think, God I'd like to get away and have one last patch of excitement before old age says goodbye to all that.

* * *

Last time we had a real war and very little preparation. This time the war is, to say the least, a little unreal and the preparation is astounding. I have just been visiting a military ambulance train and a hospital boat. The War Office and the railway and steamship companies have thought not only of the care but also of the comfort of sick and wounded troops. Each train has nine coaches, two for the resident staff and seven for the patients. The doctors and sisters have a tiny bedroom each formed out of ordinary compartments and mess rooms, while the orderly and kitchen staffs have a coach fitted with bunks and tables for meals. The kitchen and stores coach is compact and efficient, fitted with cupboards, sinks, and a coke-burning range for the cooking. The train has its own dispensary, and office for keeping records, and there are two specially padded compartments for the mentally ill! The ward coaches, as spick and span as hospital wards, have three tiers of beds. The middle tier can be let down to make seats for ambulant patients. Each coach can take 36 bed patients and 50 or 60 patients who can sit. There is no difference between the comfort of men and officers. Meals to suit the time of day are served to the patients as soon as they are on the train, and the quartermaster-sergeant remarked that the call for white bread taxed the resources of the commissariat to the utmost, the men not having had white bread since they left England. The train is staffed by two doctors, two sisters and twenty N.C.O.'s and men of the R.A.M.C.

The boats are taken from the cross-Channel services. The former staterooms have been removed and the saloon deck has been made into wards for the

more seriously ill, while the lower decks have been arranged for ambulant patients, with bunks, tables and chairs. The third-class saloon bar has been transformed into a dressing-room where minor operations can be done, while the first-class dining-saloon has been made into a ward for officers. The ship's galley provides meals for the staff and patients in transit; as on the train the personnel live on the boat. They are all trained in A.R.P. work and the steps to be taken in every calamity that can befall a ship at sea; every bed has its lifebelt at hand, and lifebelts for the staff are distributed so that they are instantly available. The beds are swung so that they sway with the movement of the ship, thus giving comparative stillness to the patients.

Part of the port accommodation has been taken over by the army authorities, and stores of linen, blankets, food and medical supplies for both trains and boats are kept there. On arrival the patients are carried from the boat into a shed (where the stretchers are placed on trestles) and they are there examined for classification by the five port doctors, three army, one air force and one naval. While the examination is going on, Miss Baxter, known to London's homeless as "The Silver Lady," with a band of voluntary helpers, distributes tea, biscuits and cigarettes among the men. A boatload of patients fills two trains, the average time between boat and train being an hour and a half. The patients are under cover practically all the time, the distance between boat and shed, and shed and train, being very short.

OBITUARY

HARVEY CUSHING

C. P. S. writes: May I add a small personal tribute to the memory of Harvey Cushing? It was my fortune to meet him first when I was an undergraduate at Oxford, and before I had any thought of medicine as a profession. It was at lunch with Sir William Osler and the talk between them was of books, the air alive with enthusiasm and banter. A servant called Osler out. He returned in a few minutes with a gleam in his eye. "Harvey," he said, "you must come—a wonderful case!" Their meal unfinished, off they went like a pair of schoolboys and swept me with them. The case was one of obstruction of the subclavian artery by a cervical rib in a lad and I listened for half an hour while they discussed it. For Cushing it illumined a pathological principle—a new light. Osler had all the literature of the subject at his command. I felt as a boy might feel who listened while Drake and Hawkins compared notes of a new landfall.

It was several years later that I served for a short time as Cushing's intern at the Peter Bent Brigham. I have never worked with any man whose energy and enthusiasm were so radiant. It is true that the glow sometimes scorched. A rebuke from Cushing direct—or more often implied—blistered. This, however, was felt as stimulus rather than injury by those who knew him. It was but evidence of the fire that burned within. No feverish heat this but a steady flame, whether in the operating theatre, on ward round or in the post-mortem room. Two memories of him in this time stand out. One of a ward round attended by many distinguished visitors; Cushing's interest was suddenly engaged by a small point in a history, and he sat on the bed for half an hour, his audience forgotten, quietly interrogating, patient and intent.

The other is that of a Saturday afternoon in the post-mortem room—a blazing day in August when most chiefs after a far less strenuous work would have been relaxing. But Cushing had a problem to solve. A postgraduate student had suggested a diagnosis that was new to him. The chief had openly dismissed it. The patient died with symptoms suggesting that this diagnosis was correct. The post-mortem proved it so. Cushing turned to the student and told him first that the diagnosis had probably been a fluke, second that if it wasn't, here was an opportunity to learn. He bade him leave all other work and start on Monday morning to delve into the literature, look into the records for other cases, discuss points of anatomy and pathology with the best informed, nor rest till he had something to report. The student during the week-end reflected that it would be more pleasant to continue his work in the wards for the short period of his stay than stew in a library. He appeared on Monday and told the chief he would like to postpone the research until his period of internship was ended. I was witness of the scene. Cushing turned upon him. "Don't you know," he said, "that the time to start work on a problem is while it is white hot? Do you read German? If not, I have told my secretary to have anything you want translated."

Others have written of his readiness to keep alive in correspondence the spirit of inquiry. I was doubtless one of many who wrote to him two or three times a year of clinical problems. I never failed to get a reply, full of interest in my questions and with inspiring news of his own work. When he visited this country he would sometimes dine with a few of the younger neurologists in London and talk late into the night of the untravelled world of medicine and of the explorer's path. He was a great leader, and at times a hard taskmaster, but in discussion he never stood on his dignity, never played the elder. Like the most junior of us he was fellow student, fellow explorer. He was a grand man, and it is good to know that both in this country and in others there burn torches kindled at his flame.

EDWARD PALMER POULTON

M. C. writes: "Poulton had joined the Emergency Medical Service and was posted to the Kent County Hospital at Pembury, near Tunbridge Wells. He appeared happier than many others who were thus transported and had entered with enthusiasm into making a moderate-sized county hospital into a large teaching hospital. Probably he was working too hard. On Oct. 17 he seemed as usual full of energy, but he died suddenly in his sleep early the next morning.

"His enthusiasm for research was his greatest and most abiding professional characteristic. It was well shown when with members of his family he endowed the Hilda and Ronald Poulton fellowship at Guy's by which a fellow or two students could work in the medical investigation department. His own research started with the physiology of diabetes and ketosis. Then from 1920 to 1925 he was continually studying dyspnœa in connexion with the oxygen and carbon-dioxide carriers in the blood and the blood pH. In Addison ward at Guy's an oxygen chamber was installed and this pointed the way for his great interest in oxygen therapy and the use of oxygen tents. At the same time he was interested in pain in gastric ulcer and sensation in the œsophagus; he carried out investigations on himself and others by introducing into the œsophagus a balloon which could be distended while the subject was under X-ray

observation. The mechanical side of any investigation always made a great appeal to him, and much of his later work was concerned with developing apparatus, such as positive-pressure machines and oxygen tents. Although his earlier tents were extremely complicated in appearance, the final version was a neat and beautiful piece of apparatus.

"Poulton had many qualities which endeared him to his friends, especially his courage and enthusiasm, his simplicity and honesty, and his kindliness and gentleness. As a young man, he was above the average at most games and at Oxford played for the university hockey XI; this must have made the chance discovery that he had heart disease all the more of a blow, as it was the end of any really active part in games. Although he must have been aware of the danger of dying suddenly, owing to his heart affection, I never heard any complaint, and it was his wife who had to try and see that he got some of the extra rest that was needed. His regular hospital duties, his research work, his books, and his many societies and meetings show how little he let his health stand in his way. In recent years he spent much time with the affairs of the League of Nations Union, of which he was a keen supporter. Everyone liked Poulton and even when they differed from him about some point of hospital policy they always knew his radicalism was due to his enthusiasm for what he thought best and that there was no hidden or ulterior motive."

Dr. ALEC LANDALE CLARK, who died from the results of a motor accident in the dark on Nov. 5, will be missed by a host of friends who knew him for his devotion to duty, keen sense in things medical, great musical talents, and above all, his kindly attitude to all from the highest to the lowest in the land. No man, writes N. B. W., ever heard Dr. Clark belittle anyone, and a mean act or utterance was completely foreign to his nature. As an Edinburgh man he will be long remembered for his magnificent voice. He was for over ten years secretary of the Edinburgh University Club of London and he was a founder of the Scottish Medical Golfers' Society. The loss of his former partner, Dr. Brunton Blaikie, left him with great responsibilities and these he carried with surprising ease.

PARLIAMENTARY INTELLIGENCE

ON THE FLOOR OF THE HOUSE

By MEDICUS, M.P.

THE House is now sitting regularly on Tuesday, Wednesday and Thursday, and there is talk of this session coming to an end at the end of November and of a new session, with a King's Speech, being inaugurated within a few days. There is the prospect of a break at Christmas-time, although it is not impossible for the House to sit then if any emergency should require it. Meanwhile the private member is doing well. Mr. Dingle Foot on Tuesday last made some very effective criticisms of the powers conferred on the Home Secretary under the Emergency Powers Defence Act which led to an offer by Sir Samuel Hoare to introduce an amended set of regulations after consultation with the Liberal and Labour oppositions. It was a remarkable personal achievement and a remarkable victory for democratic common sense. On Wednesday Mr. Kenneth Lindsay, parliamentary secretary to the Board of Education, announced that the schools in the towns were to be reopened but did not explain that as more than half of them have been requisitioned for first-aid posts or other purposes of civil defence the accommodation will be very limited. This reopening of town schools coupled with the demand for a payment by parents for evacuated children controlled by a means test is thought likely to have the effect of bringing back children in large numbers from the country. If there are "serious air-raids" the schools are to be closed. Sir William Davison said that this change of policy was "likely to cause a rush back" of children, but Mr. Kenneth Lindsay replied that it provided no justification for parents bringing their children back from the reception areas. But combined with the coming of Christmas it will probably have that effect. Nevertheless steps are now to be taken to provide school medical and nursing services and other public health services in the reception areas on a larger scale than already exist there.

* * *

It is an unfortunate fact that up to about 80 per cent. of the nursing staff of the various public health services have left their ordinary work in the towns and enlisted as first-aid workers at first-aid posts, mobile units or in hospitals. These nurses can all be replaced in the casualty services by nurses already on the lists of the Civil Nursing Reserve and it was strongly suggested in the debate that this course should be taken. With schools in the towns reopening and winter coming on in the country the need of the school nurses in town and country will be great. Mr. Walter Elliott, in a very interesting résumé of the state of evacuation to date, laid great stress on the fact that epidemics in September and October of 1939 were actually (on the whole) less than in 1938. It is true that healthier country conditions may have something to do with this, but it is also probable that the more favourable weather of 1939 was also a factor.

Mr. Elliott said that many of the children in the reception areas had taken root in the country, and he appeared to anticipate that a large number of them would remain there permanently, at least during the war. Nevertheless they will only so remain if the conditions are and remain good, and, as one member said, every effort should be made now to perfect and improve the conditions in the schools and the reception areas and the conditions of living in these areas of the evacuated children so as to set up a natural attraction to the country and to provide good conditions which will be available if and when another big rush of evacuation takes place after the bombing of cities. In view of this possibility, it might be thought that the Government would take compulsory powers to keep children in the country when they have once been taken there and paid for at Government charge. But this Government does not like doing anything compulsorily if it can be arranged with administrative officials to do without compulsion. Just as the Minister of Food shies at rationing, although informed opinion considers that rationing would be the fair way of securing an equal distribution of food, so the home defence authorities shy at compulsory evacuation. British freedom includes not only the right to get drunk but the right to get bombed—and no doubt the right to grouse about it afterwards in the case of those alive to do so.

* * *

On Wednesday the House discussed a Labour motion urging "an immediate improvement in the position of old-age pensioners." That the pensions of the aged

are inadequate in the present time of rising prices and that they are likely to prove still less adequate as prices continue upwards, is a proposition very difficult to combat. The Government did not try; they tried to side-track it by the usual method of proposing an "investigation" of the subject. In this case however the investigation is to be a real and, what is more important, a speedy one. An investigation into the conditions of old-age pensioners did indeed begin during last summer, and we may be sure there is already a good deal of information available in the files of the Government department. The inquirers should therefore be able to report by the end of the year if not for Christmas. Some prices have gone up very greatly in the last few months and a rise in the price of sugar, coal and gas alone is a serious item in an old-age pensioner's budget.

Pensions are of two kinds, contributory and non-contributory. An increase in contributory pensions depends on the willingness of workers to pay an additional sum on their cards every week. This the workers, speaking through their representatives here, now agreed to do and it is probable the employers will follow suit. In this case Sir John Simon announced that the state would probably also increase its contribution and that matter would be settled for the future, although any immediate increase of pensions would fall on and be met out of state funds. Any increase of non-contributory pensions, however, must fall wholly on the state, and the Government appear to think that this should in some way be met out of public assistance funds. If the idea behind this is that the increase in amount is temporary it had better be dropped. Any increase in old-age pensions now is likely to be permanent.

The pensions debate was another example of the new non-party character of Parliament. On a matter of this social kind members of all parties were enabled to unite in attacking the Government and even the Government hardly resented it.

FROM THE PRESS GALLERY

Evacuation Problems

In a debate on evacuation in the Lords on Nov. 1, the BISHOP OF WINCHESTER said that while he believed the Government were right in evacuating children the evacuation of mothers with their children had been a failure. A large number of these mothers had now returned to the towns. It was quite natural that the women should desire to return to their husbands, and if there was another evacuation, perhaps on a larger scale, no attempt should be made to encourage the women to leave their husbands. Of course, expectant mothers ought to be removed to safety areas, but only for a period. The younger children ought also to be removed, but their case should be met by hostels and trained workers and by nursery schools. The ARCHBISHOP OF CANTERBURY said there was urgent need for medical officers of health to provide special hospitals as sick bays to which evacuated children who were ill or infected could be removed. It was quite impossible for small households, already overcrowded, to deal with sickness. One of the gravest problems was the break-up not only of school life but also of family life. This was all very well for a short time, but what would happen if it went on for a year or two? He did not suggest that the great system of precautions which have been built up should in any serious way be affected, but he did ask whether it might not be too elaborate, out of proportion to the reality of the danger and to the other needs of the community.

Viscount DAWSON OF PENN thought that the basic reason for the difficulty in bringing about a complete evacuation was the fundamental instinct of human nature—the homing instinct. This could not be cut through by any legislation and it would operate most in mothers with children under five. The conclusion was irresistible that no evacuation would ever be more than partial. But that did not mean that the policy of evacuation must be abandoned; far from it. By concentrating on the quality of the work done for a smaller number of evacuees they would get a result which would more than compensate for the loss of the larger number. They could not divide the questions of education and health. He trembled to think what the consequences would be in these winter months if 250,000 children were to go on drifting about London doing nothing during their school hours. Not only that, but they must face that the welfare and hospital services had been reduced to mere skeletons; babies were not looked after as they were in peace-time; and school medical services were worked at half-speed. While they could afford to shut the big hospitals for a short time, they could not afford, except in circumstances which were very urgent indeed, to keep them closed any longer. A time when there would be a great deal of infectious sickness was approaching. This year there was reason to fear that they might get the height of the cycle of measles, and if measles came they might get diseases like diphtheria. A severe outbreak of influenza in one of these overcrowded communities might present a terrible problem. Under conditions of anxiety, such as the nation was going through now, the resisting power of the community was lower and demanded greater care and caution than in peace. It might have been necessary to close down the big hospitals in London for a short period, but he would open them again forthwith with certain limitations which would fit them for the special duties and special dangers they had to meet. If a third of each hospital were set aside for casualties and the remaining two-thirds restored to peace-time work, and if there were special facilities for evacuating into a hospital near by—not at all difficult to arrange—he believed that that proposition was quite practicable. The emergency medical service had a task of vast difficulty in setting up a number of hospitals adapted for all sorts of purposes and it had done wonderful work. But hospitals were not built in a day. A big hospital was not merely an assemblage of bricks and mortar—it was a great living organism—and they could not uproot it in the way that was being done without incurring grave results. Without further delay these big hospitals should be opened, medical education should be restored, and the training of nurses resumed.

Earl DE LA WARR, President of the Board of Education, said that they had all got to admit that this was a second-best scheme; that the right place for the children was in their homes and schools in the towns. The question of nursery schools was under the careful consideration of himself and the Minister of Health. For some weeks no child had been evacuated who had not been thoroughly medically examined, and in no case would a child be evacuated in future until it had been cured of such diseases as scabies. To get all the remaining children out of the vulnerable areas would mean compulsion and except in the most extreme circumstances no-one would desire to adopt such a measure. The Government were therefore driven back on the reopening of schools in the vulnerable areas. This, however, should not be taken as an "all clear" signal. The Government had been influenced solely by the fact that they could not afford to let 750,000 children grow up without education, school discipline or medical care.

DEBATE IN THE COMMONS

In a review of evacuation in the House of Commons on Nov. 2, Mr. WALTER ELLIOT said that the actual movement covered 750,000 unaccompanied school-children, 542,000 mothers and young children, 12,000 expectant mothers and 77,000 others. About 50 per cent. of the mothers and others who were evacuated and about 78 per cent. of the unaccompanied school-children were still in the reception areas. The

efficiency of the health services could be estimated from the vital statistics. Returns of the incidence of infectious diseases in the reception areas were now available for the first two months since the outbreak of war. There has been no such increase as was feared. Indeed, the figures for the "fevers" were actually lower than for the corresponding period of 1938. That was a very fine result.

Mr. TOMLINSON: Is the right hon. gentleman aware of any district in which rather than lose the payment for billeting, children are being kept in the homes to which they have been evacuated, and not sent to the hospitals that had been provided?

Mr. ELLIOT: No, Sir, I am not aware of that, and I should be surprised if it were taking place on any large scale—certainly on any scale sufficient to vitiate the figures which I am about to give to the House. I am dealing with notifiable diseases for which medical men receive a fee for notification. It is not merely a matter of goodwill on one side or the other. The doctors are paid to carry out this work, and they receive a fee for notification.

Mr. TOMLINSON: Perhaps the Minister has overlooked the fee for attendance if the patients remain at home.

Mr. ELLIOT said that any doctor who did not isolate cases of cerebrospinal fever, infantile paralysis, enteric fever, diphtheria and other diseases he (Mr. Elliot) was talking about would be guilty of the greatest negligence. The doctor might, indeed, find himself open to a much more serious charge. He (Mr. Elliot) did not want to over-emphasise these cases, because it had been a sunny and healthy autumn and these figures must be considered with all due reserve. But it was remarkable that in the two months of this great migration the nation actually had less epidemic disease than in two corresponding months of full peace.

Mr. Elliot then gave the following comparative figures for last year and this.

	7 weeks to Oct. 21.	
	1938.	1939.
Diphtheria	9960	7637
Enteric fever	284	437
Pneumonia	4365	3268
Cerebrospinal fever	141	177
Poliomyelitis	544	267

The same conclusion was, he said, borne out by an examination of the maternity problem. To move nearly 12,000 expectant mothers, still more to carry through childbirth with a scratch nursing personnel and improvised accommodation, was an anxious task. In the 165 or so maternity homes, comprising 4500 beds, which were improvised in the reception areas, over 3500 confinements took place in the first six weeks of war. The proportion of complicated cases had been no higher than normal. The incidence of puerperal fever and puerperal pyrexia up to the week ending Oct. 21 showed no increase over 1938.

The Ministry of Health had authorised the provision of accommodation in separate houses for children suffering from minor illnesses, or convalescent from more serious illnesses, who could not properly be cared for in billets. In many areas women's voluntary services had expressed their readiness to help with the staffing of the houses. Where the receiving district authority agreed, the county council would be responsible for providing and maintaining the sick bay. The establishment of sick bays for minor illness required careful medical control. It was important that each case should be admitted only on the recommendation of a medical practitioner, that the practitioner should continue to attend regularly at the sick bay, and that the staff should include at least one trained nurse. It was not possible to give figures for the whole country showing how much additional sick-bay and isolation accommodation for non-notifiable infectious diseases had been provided, but he had some specimen figures which showed that for a total evacuated population of about 383,000, about 800 beds were being provided for non-notifiable infectious diseases and about another 800 beds for minor illnesses. If the same proportion persisted throughout the whole country something like 2500 beds had been provided for non-notifiable infectious diseases and about the same number for cases of minor illness—a total of some 5000 beds in all. The present arrangements provided for the compulsory notification of scarlet fever but not measles. This was not a scarlet-fever year, but a measles year. Consequently they had made both measles and whooping-cough compulsorily notifiable. Thus local authorities would know at once wherever an epidemic threatened and would be able to take the necessary measures promptly. Beds in the emergency hospital scheme would be available, if necessary, to deal with calls for extra beds for cases which the existing infectious diseases hospitals were not capable of accommodating.

Dr. HADEN GUEST confessed that the statement in regard to evacuation was more favourable than he expected. Taking people away from the scenes of bombing avoided unnecessary casualties which would overcrowd hospitals and make first-aid work extremely difficult. But, perhaps more important than anything else, evacuation saved the younger generation from suffering war shock, from which the child population might take longer to recover than from an ordinary wound. There was urgent need for improved welfare services in the reception areas—especially medical and nursing services. It would be a valuable step to bring all public-health-trained nurses back to their public-health work, especially those who were engaged in the schools, in view of the fact that they could be replaced in the first-aid posts. There seemed no reason why the nursing and medical services required for school work should not be reinstituted in the towns, and why those not required in the towns should not be lent to the reception areas.

Sir FRANCIS FREMANTLE said that the Minister of Health had skipped rather lightly over the difficulties in regard to winter diseases. It had always been the regular understanding in the public-health service that one should not made a disease notifiable unless there were means of dealing with it by nursing or isolation or both. The Minister did not say that he hoped to be able to provide isolation in the new treatment hospitals. As far as he knew it would be impossible to isolate and deal with an epidemic of whooping-cough or measles in any area in his part of the country.

Mr. HERBERT MORRISON said that he was told that a grave difficulty was arising in regard to hospital supplies, particularly surgical instruments. The Surgical Instruments Manufacturers Association had agreed that 90 per cent. of their output should be allocated to the War Office for military purposes. How the hospitals of the country—voluntary and municipal—would get their share out of the remaining 10 per cent. he did not know.

QUESTION TIME

Tuberculous Persons and Evacuation

Mr. EDE asked the Minister of Health whether advice had been tendered to billeting authorities by his department on the undesirability of billeting evacuated persons, especially children, in houses in which a patient recently discharged from a tuberculosis sanatorium lived.—Mr. ELLIOT replied: I recently made it clear to a conference of representatives of the voluntary organisations for the prevention and cure of tuberculosis and of medical officers of health that patients in the infective stages of tuberculosis who had been inadvertently discharged from sanatoria at the outbreak of war should be sought out and brought back for treatment. I have no reason to believe that billeting officers are not alive to the point made by the hon. member.

Rationing

Replying to Mr. A. V. ALEXANDER, Mr. W. S. MORRISON, Chancellor of the Duchy of Lancaster, announced that

the Government had decided to take the necessary steps to enable the rationing of individual consumers to be put into operation. There were, however, only two commodities —namely, bacon and butter—which the Government considered it necessary to ration, and even with these it was not proposed to begin rationing before the middle of next month. The actual date would be announced later. The amount of the ration would depend on the supply position from time to time. Provided that imports continued at the present rate, as there was good reason for assuming they would, the ration for both bacon and butter would be 4 oz. per week. There was no need to impose rationing for any other commodity. The manufacture of margarine had been greatly increased since the outbreak of war; the quantity of cooking fats available was equal to normal, and adequate supplies of meat should continue to be available. As regards sugar, if each consumer restricted purchases to 1 lb. per head per week there would be sufficient supplies for some months for every home as well as for manufacturers, hotels, and restaurants without need of rationing. In the meantime it was important not to waste food.

Emergency Medical Service

Sir ERNEST GRAHAM-LITTLE asked how many members of the visiting staffs of the voluntary hospitals in London had enrolled to date under emergency conditions in the categories enumerated by him—namely, whole-time service, whole-time service with indefinite leave without pay, service with option to transfer from whole-time to part-time on conditions formulated in the Ministry circular, dated Sept. 18, and voluntary enrolment with the Ministry—directly; whether he was aware of the inadequacy of the offers at present made; and whether he had in contemplation any proposals more acceptable as regarded remuneration and opportunities for continuing some measure of hospital and private practice.—Mr. ELLIOT replied: The number of specialists and senior members enrolled in the Emergency Medical Service who reported for whole-time service in the London sectors and who are for the most part on the visiting staffs of the London voluntary hospitals is 656. Of these 17 are on indefinite leave without pay and 5 have transferred to part-time. So far there has been one offer of service without obligation. As I stated last Wednesday and Thursday, the whole question has been under consideration by a special committee, which includes the presidents of the three Royal Colleges and which was set up on Oct. 18. I learned yesterday that this committee have now formulated their recommendations, which they are coming to discuss with me tomorrow.

Sir E. GRAHAM-LITTLE: Does the right hon. gentleman realise how very mischievous is the uncertainty of the position for these voluntary hospitals, and as only 25 per cent. of the members of these staffs have applied for part-time service, is it not obvious that other means should be adopted?—Mr. ELLIOT: It is for that reason that I have given the utmost urgency of consideration to the recommendations brought forward by the body which I have just mentioned.

Summer-time

Replying to Mr. VYVYAN ADAMS, Sir JOHN ANDERSON announced that under the Summer Time Acts the date for the introduction of summer-time next year would be April 21. The question of an earlier date would be considered in due course.

MEDICAL NEWS

University of Oxford

In a congregation held on Oct. 31 it was resolved that in Hilary Term, 1940, the Radcliffe travelling fellowship, the Christopher Welch scholarships and the Rolleston memorial prize should be suspended.

University of Cambridge

On Nov. 4 the following degrees were conferred:

M.D.—G. D. Hadley (by proxy).
M.B., B.Chir.—W. H. St. John-Brooks, Herbert Curtis, J. S. H. Wade, G. C. Smith.

Royal College of Physicians of London

The next examination for the membership of the college will be held on Jan. 3. Further particulars will be found in our advertisement columns.

Naval Medical Compassionate Fund

At the quarterly meeting of the directors of this fund, with Surgeon Vice-Admiral Sir Percival Nicholls in the chair, the sum of £149 was voted to the applicants whose cases were considered.

Royal Society

At 2.30 P.M. on Thursday, Nov. 16, Prof. J. H. Gray, F.R.S., will deliver a Croonian lecture to this society at the zoological department, Downing Street, Cambridge. He will speak on aspects of animal locomotion.

Radcliffe Infirmary, Oxford

The quota of foreign refugee doctors at this hospital is now full, and no further applications can be considered at present.

Ministry of Health

Miss E. M. R. Russell-Smith and Miss E. A. Sharp have been appointed assistant secretaries (acting) of the Ministry of Health.

National Hospital, Queen Square

The notice that the hours of the outpatient department at this hospital have been altered has resulted in an increased number of attendances. Patients should, if possible, come on Monday, Tuesday, Wednesday, Thursday and Friday at 9.30 A.M. In certain circumstances some patients can be seen up to noon.

Fellowship for Medical Research

Particulars will be found in our advertisement columns of the Kirk Duncanson fellowship for medical research which is offered by the council of the Royal College of Physicians of Edinburgh. The value of the fellowship for the first year will be £350 and applications should be sent to the secretary of the college not later than Jan. 25.

Institute for the Scientific Treatment of Delinquency

It has now been found practicable to reopen the clinic at 8, Portman Street, W.1, where applications may be made either by letter or telephone to the secretary. For the present the work of the clinic must be restricted to diagnosis and advice (including social work and disposal), but the directors are trying to arrange for psychological treatment to be carried out in central London. Arrangements are also being made to carry out diagnosis and treatment in certain districts outside London.

Scottish Conjoint Board

At recent examinations of the Royal Colleges of Physicians and Surgeons of Edinburgh, and the Royal Faculty of Physicians and Surgeons of Glasgow, the following were successful:—

L.R.C.P. & S.E., L.R.F.P.S.G.

Louis Abel, J. D. Addison, Moe Ashpis, Elizabeth N. G. Baker, L. A. Bornstein, R. P. Boyd, Arnold Breecker, J. C. L. Cameron, C. M. Chambers, A. D. Chisholm, G. A. M. Cowie, Harry Cohen, S. Dz. Cudjoe, Robert Dalrymple, Israel Diamond, C. C. B. Doherty, H. Du T. Du Toit, Otto Eisert, Edwin Emma, L. G. Ermshar, Abraham Fink, M. C. K. Finlayson, Sidney Fox, Leo Gitman, Alexander Glassman, L. L. Goldberg, M. M. Goldenkranz, Seymour Gudis, G. R. Jones, A. I. Kaplan, L. A. Kaplan, E. W. Langs, R. B. Lenora, Israel Levinson, Marcus McAlley, S. N. Mandel, Meyer Mariaskin, R. J. Mehr, Alfred Michelson, Jean Middlemiss, R. A. Morrison, John Morton, R. S. Morton, J. H. Murray, M. N. A. Nasir, W. C. Pilgrim, Eli Pravda, H. M. Pretorius, M. R. Rapoport, S. W. Rubin, Thomas Russell, D. R. Sandison, K. S. Seal, D. M. Simpson, Leon Singer, D. R. Skudowitz, T. M. Small, George Smith, C. B. Storch, A. M. Tawfic, M. H. Tischler, E. M. Webster and Alex Weiss.

The following graduates of recognised foreign universities have also been admitted licentiates:—

Joseph Adler, E. J. Billigheimer, Josef Brand, K. F. Hirsch, Erich Horowitz, Richard Hurwitz, Emanuel Schleyer, W. Th. Strauss, Rudolf Treu, Alfred Vogl and Werner Worms.

Universities Parliamentary Committee

A parliamentary committee of representatives of the universities in Parliament has been formed under the chairmanship of Sir Ernest Graham-Little. The committee will meet from time to time to discuss subjects affecting the universities and education generally. At the first meeting items discussed were: legislation for the conduct of universities during the war; the commandeering by Government departments of buildings used for educational purposes; and the calling up under the National Service Act of students at universities and training colleges nearing important examinations.

Emergency Medical Service

On Nov. 4 Mr. Walter Elliot, Sir George Chrystal and Dr. Hebb discussed with representatives of the advisory committee set up by the Central Medical War Committee their recommendations for the reorganisation of the Emergency Medical Service. The main objects of these recommendations are to release consultants and other senior members of the medical profession from their whole-time obligations in the Service, so that they may be free to attend to the needs of the civilian sick and to their normal duties in the medical schools, while remaining available on a part-time basis for casualty work.

Course in Psychological Medicine

The annual course of lectures and practical instruction for a diploma in psychological medicine, held at the Maudsley Hospital, Denmark Hill, S.E.5, under the auspices of the London County Council and the University of London, will begin as usual on Jan. 1. War conditions will necessitate some alterations in arrangements, but the clinical instruction necessary to satisfy the requirements of the various examining bodies will be provided. Further information may be had from the honorary director of the medical school, the Central Pathological Laboratory, West Park Hospital, Epsom, Surrey.

British Institute of Philosophy

A special series of public addresses on the deeper causes of the war and the issues involved in it will be given in the Assembly Hall of the Royal Empire Society Craven Street, Strand, W.C.2, at 2 P.M. on Thursdays, beginning on Nov. 16. The first four speakers will be Prof. W. G. S. Adams, warden of All Souls College, Oxford, Prof. Gilbert Murray, formerly regius professor of Greek in the University of Oxford, Viscount Samuel and the Very Rev. W. R. Matthews, dean of St. Paul's. Tickets may be had from the director of studies of the institute, University Hall, 14 Gordon Square, London, W.C.1.

For Australian Soldiers

The Prime Minister of Australia has accepted Lord Stradbroke's offer of Henham Hall, Wangford, Suffolk, as a convalescent home for Australians.

London Clinic of Psycho-analysis

The absorption of psychiatrists by official emergency organisations has led to an increasing need for psychological guidance and treatment for those who are suffering from nervous crises brought on by the war. To meet this need the London Clinic of Psycho-analysis (96, Gloucester Place, W.1) has organised a temporary psychological aid centre, which opened on Nov. 3. Three units have been arranged to provide advisory consultations and short emergency treatments on Mondays at 2 P.M., Wednesdays at 3 P.M. and Fridays at 2 P.M. The ordinary psycho-analytical routine of the clinic will not be affected by this auxiliary service. Analytical treatments will be carried on as before; and analytical consultations will be given at the usual time (each Tuesday at 5 P.M.). If necessary emergency treatments will also be provided on this day. The Clinic is making no charges for its emergency guidance and treatment. It is a sign of the times that the clinic is prepared to depart from its classical technique of psycho-analysis. It is hoped that many of the temporary crises will be of a kind that can be alleviated by one consultation, but under the emergency scheme as many as 12 treatments spread over 4 weeks may be given.

Maida Vale Hospital for Nervous Disease, London

From Monday, Nov. 13, the outpatient department of this hospital will be open daily at 7.30 A.M. instead of at 1.45 P.M.

Rations for Diabetics

The Medical Advisory Committee of the Diabetic Association have agreed that diabetics require 70 grammes of protein and 100 grammes of fat a day as a desirable minimum in most cases, and the rationing authorities have been asked to sanction this amount. In the last war there were no special rations for diabetics, but the diet adopted is now as a rule very different from what was usual then.

Medical Diary

Week beginning November 13

ROYAL SOCIETY OF MEDICINE, 1, WIMPOLE STREET, W.1.

TUESDAY

Psychiatry, 2.15 P.M., meeting in honour of Sigmund Freud, Dr. Ernest Jones, Prof. E. Mapother, and Prof. Millais Culpin will speak.

FRIDAY

Physical Medicine, 2.30 P.M., Dr. J. B. Mennell: Foot-gear. (Presidential address.)

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 26, PORTLAND PLACE, W.1.

THURSDAY

4 P.M., Prof. P. A. Buxton: The Louse—Present Knowledge and Future Work.

MEDICAL SOCIETY OF LONDON, 11, CHANDOS STREET W.1.

THURSDAY

3 P.M., Sir Robert Hutchison: Medical Literature. (David Lloyd Roberts lecture.)

PADDINGTON MEDICAL SOCIETY.

TUESDAY

2.30 P.M. (St. Mary's Hospital, W.2) discussion on Present Conditions of Medical Practice.

BRITISH POSTGRADUATE MEDICAL SCHOOL.

DAILY

10 A.M.–4 P.M., Medical clinics; surgical clinics and operations; obstetrical and gynæcological clinics and operations. 1.30–2 P.M., Postmortem demonstration.

MONDAY

3.30 P.M., Lord Horder: Ward clinic.

WEDNESDAY

11.30 A.M., Clinical-pathological conference (medical). 2.30 P.M., Clinical-pathological conference (surgical).

THURSDAY

2–4 P.M., Dr. Duncan White: Radiological conference.

FRIDAY

2 P.M., Clinical-pathological conference (gynæcological).

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED OCT. 21, 1939

Notifications.—The following cases of infectious disease were notified during the week: Smallpox, 0; scarlet fever, 1336; diphtheria, 975; enteric fever, 31; pneumonia (primary or influenzal), 493; puerperal pyrexia, 159; cerebrospinal fever, 18; poliomyelitis, 37; polio-encephalitis, 3; encephalitis lethargica, 1; relapsing fever, 1 (Chelsea); dysentery, 62; ophthalmia neonatorum, 74. No case of cholera, plague or typhus fever was notified during the week.

Deaths.—In 126 great towns, including London, there was no death from smallpox or scarlet fever, 1 (0) from measles, 2 (0) from scarlet fever, 5 (1) from whooping-cough, 22 (0) from diphtheria, 31 (0) from diarrhœa and enteritis under two years, and 23 (3) from influenza. The figures in parentheses are those for London itself.

Birmingham had 2 deaths from whooping-cough. Fatal cases of diphtheria were scattered over 18 great towns, Liverpool reporting 3, Stockport and Bristol each 2. Manchester attributed 3 deaths to influenza. Liverpool had 4 deaths from diarrhœa.

THE RISING TIDE OF ABORTIONS IN FINLAND

Dr. A. Apajalahti of Helsingfors has some disquieting information to give concerning the increasing frequency of induced abortions in Finland (*Nord. Med.* Sept. 30, 1939, p. 2943). In the Helsingfors hospitals 26,491 cases of abortion were treated in the period 1901–37, of which 21,007 came from the city itself. At the beginning of this century about 1·9 abortions were treated in these hospitals per 1000 women living in Helsingfors between the ages 15–50. This ratio rose to 12·5 per 1,000 in the course of 35 years. The rise may of course mean that a greater proportion of cases now come to hospital, but it must also depend on a large increase in the abortion-rate itself. In 1900 the birth-rate was 29·8 per 1,000 inhabitants, whereas in 1935 it was down to 9·4. This remarkable decline in the birth-rate and rise in the abortion-rate are, of course, closely related and it is remarkable that the ratio of abortions treated in hospital to all pregnancies in the period under review has risen from 2·2 per cent. to 31·6 per cent. This means that at the present time at least every third pregnancy ends in abortion. The married have a much lower abortion-rate than the unmarried, the percentages being 22 and 67 respectively. Every age-group participates in the growing frequency of abortions, although it is particularly under the age of 30 that the rate is highest. The frequency of febrile abortions requiring treatment in public hospitals has risen from 0·2 per cent. of all pregnancies to 13·3 per cent.—66 times higher than it was. The case fatality-rate from abortions was 2·4 per cent. among the unmarried against 1 per cent. among the married. Dr. Apajalahti's study contains many other statistical data, all of them melancholy signs of the times.

BIOGRAPHY OF HARVEY CUSHING

Dr. J. F. Fulton of Yale University School of Medicine, 333 Cedar Street, New Haven, Conn., writes: Mrs. Cushing has requested me to prepare a biography of her husband, and I should be most grateful to anyone who wishes to make letters, anecdotes or other memorabilia available. Copies of all letters, no matter how brief, are desired, and if dates are omitted it is hoped that, when possible, these may be supplied—e.g., from the postmark. Original letters or other documents submitted will be copied and returned promptly. A new building is being erected at the Yale University school of medicine to receive Dr. Cushing's library and collections, and any who wish to present correspondence, photographs or other memorabilia for permanent preservation among the Cushing papers will receive the thanks of the University.

Prof. CARL GUSTAF SANTESSON of Stockholm, who died on July 26, enjoyed an international reputation as a pharmacologist. He was born in 1862, and will be remembered for the important contributions he made to toxicology, and in particular to the study of arrow poisons.

PUNCH ALMANACK 1940.—The windows of London, on the cover of the new Punch Almanack, are brightly lit; and this symbolises the lack of black-out gloom from the inner pages. There is an impressive double-page colour drawing by Illingworth of a duel between a free British airman and a Nazi monster—over a most attractive little German town. But this is the only stern note; the other pictures by old favourites and new are full of light and laughter. The whole makes a very cheering shillingsworth.

WE have received from H. R. Napp Ltd., 3 & 4, Clements Inn, London, W.C.2, samples of a new poly-vitamin preparation, Abecedin. As its name suggests, it contains A, B_1, B_2, C and D_3. Each tablet or teaspoonful of the emulsion contains the equivalent in vitamin-content of ℥ 2 cod-liver oil, ½ pint milk, 1 new laid egg, and ℥ 1 orange-juice.

Vacancies

Boston General Hosp.—Res. M.O., at rate of £150.
Cambridge, Addenbrooke's Hosp.—Cas. O. and supernumerary H.O., at rate of £130. H.P., at rate of £130. Also res. anæsthetist and emergency officer, at rate of £130.
Cardiff, King Edward VII Welsh National Memorial Assn.—Asst. res. M.O. for Glan Ely Hosp., £200.
Castleford Urban District Council.—M.O.H., £800.
Dudley, Guest Hosp.—H.S., £150.
Edinburgh, Royal College of Physicians.—Kirk Duncanson fellowship for medical research, £350.
H.M. Colonial Medical Service.—M.Os.
Lincoln City.—Deputy M.O.H., £600.
Liverpool, Royal Children's Hosp., Myrtle-street.—Res. H.S., at rate of £100.
Manchester, Royal Children's Hosp., Pendlebury.—Res. M.O., at rate of £150.
Manchester, Victoria Memorial Jewish Hosp.—Res. M.O., at rate of £150. Also jun. H.S. and cas. O., at rate of £100.
Newcastle-upon-Tyne, Royal Victoria Infirmary.—Res. surg. O., £300. Three temp. med. regs., each £250. Also three jun. surg. regs., £150.
Newport, Mon., Lydia Beynon Maternity Hosp.—Res. M.O. and asst M.O. for maternity and child welfare, £450.
Newport, Mon., Royal Gwent Hosp.—Appointments at rate of £200–£150.
Nottingham Children's Hosp.—Res. H.S., at rate of £150.
Oldham Royal Infirmary.—Res. surg. O., £400.
Plymouth, Prince of Wales's Hosp., Greenbank Road.—H.S., at rate of £120.
Queen's Hosp. for Children, Hackney Road, E.2.—H.P. and cas. O., each at rate of £100.
Royal Free Hosp., Gray's Inn Road, W.C.1.—Registrar in ear, nose, and throat dept., at rate of £100.
West Hartlepool, Cameron Hosp.—H.S., £150.

The Chief Inspector of Factories announces vacancies for examining surgeons at Mevagissey, Cornwall; Cranborne, Dorset; and Selston, Nottingham.

Appointments

BECK, ADOLF, M.D. Franfurt, L.R.C.P.E., assistant medical officer for bacteriology, pathology, and venereal diseases for Burnley.
BROWN, ELIZABETH E., M.B. Glasg., B.Hy. Durh., D.P.H., assistant medical officer of health for Bedford.
GEMMILL, GEORGE, M.B. Glasg., D.P.H., senior assistant medical officer of health for Burnley.
KNOX, H. J., M.B., Belf., senior assistant resident medical officer at the Birch Hill Hospital, Rochdale.
MCALPINE, THEODORA, M.B. Glasg., assistant resident medical officer for the new maternity hospital at South Shields.
MCCLEMONT, J. E., M.B. Glasg., temporary assistant (deputy) medical officer at the New Cross Hospital and Institution, Wolverhampton.
MCNAIRN, ALISON J., M.B. Lond., assistant medical officer at the City General Hospital, Plymouth.
PIKE, RUTH, M.B. Dubl., assistant medical officer of health for Huddersfield.
POSTON, HENRY, M.Ch. Belf., F.R.C.S.E., orthopædic surgeon to the Victoria Memorial Jewish Hospital, Manchester.

Examining Surgeons under the Factories Act, 1937: Dr. P. S. BYRNE (Carnforth district, Lancashire); and Dr. T. S. BLAIKLOCK (Morpeth district, Northumberland).

Births, Marriages and Deaths

BIRTHS

ADAM.—On Nov. 3, at Seaford, the wife of Major W. E. Adam, R.A.M.C.—a son.
BATEMAN.—On Nov. 5, at Rochdale, the wife of Squadron-Leader G. H. Bateman, F.R.C.S., of Hampstead—a son.
GILROY.—On Oct. 29, at Oxford, the wife of Major J. C. Gilroy, R.A.M.C.—a son.
GORNALL.—On Oct. 31, at Nailsea, near Bristol, the wife of Dr. W. A. Gornall—a son.
PYKE.—On Oct. 31, at Bristol, the wife of Dr. H. D. Pyke—a son.

MARRIAGES

MARTIN—ELLIS.—On Oct. 28, at Cambridge, Laurence Cleveland Martin, M.D., of Southampton, to Mary Ellis, of Aberystwyth.

DEATHS

BAILLIE.—On Oct. 26, at West Runton, Major George Baillie, M.B. Dubl., R.A.M.C.
BAXTER.—On Nov. 5, at Hove, Edward John Baxter, L.R.C.P.E., late medical missionary in Tanganyika.
BUCHANAN.—On Nov. 1, at Queen's Gate, London, Archibald Graham Buchanan, M.R.C.S.
CLARK.—On Nov. 5, Alec Landale Clark, M.B. Edin., of Gilbert Street, W.1.
HORSBURGH.—On Nov. 2, in Edinburgh, James Henry Horsburgh, M.B. Edin., M.O.H. for Musselburgh.
COATS.—On Oct. 4, at Christchurch, New Zealand, George William Coats, M.B. Glasg.
STRATON.—On Nov. 1, at Exmouth, Lieut.-Colonel Charles Henry Straton, M.R.C.S., R.A.M.C. (ret.), aged 63.